INDEX TO THE EPITOME FOR VOLUME II, 1924.

READERS in search of a particular subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral; Heart and Cardiac; Liver and Hepatic; Renal and Kidney; Cancer and Carcinoma; Epithelioma, Malignant Disease, New Growth, Sarcoma, etc.; Child and Infant; Bronchocele, Goitre, and Thyroid; Diabetes, Glycosuria, and Sugar; Eye, Ophthalmia, and Vision, etc.

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EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

1. Blood Transfusion in Pernicious Anaemia.

A. ZETTERQVIST (*Svenska Läkaresällskapets Handlingar*, March 31st, 1924, p. 1) gives an account of 10 cases of pernicious anaemia and 6 of secondary anaemia in which intramuscular or intravenous injections of blood were given. No great benefit was derived from this treatment in the cases of secondary anaemia due to causes such as malignant disease. But in most of the cases of pernicious anaemia remarkable and even dramatic results were obtained, and though they were not always permanent there was great improvement for a considerable time. In 4 out of 7 cases in which small intramuscular injections were given great improvement resulted in the blood picture as well as in the clinical condition. All four patients had previously been treated with arsenic and iron without noticeable improvement. In 3 cases large intravenous injections of blood were given, and in one of these cases the patient was practically moribund when 500 c.cm. of her husband's blood were injected. She was restored to comparatively good health for several months; when she relapsed, another injection of her husband's blood had but little effect; a third injection was valueless and death ensued, the diagnosis of pernicious anaemia being confirmed at the necropsy.

2. Epidemic Gangrene of Genitals in Children.

W. K. STEPHANSKY (*Deut. med. Woch.*, March 7th, 1924, p. 305) has observed as many as twenty cases of gangrene of the external genitals of girls at his hospital in Odessa between December, 1922, and June, 1923. In many respects the clinical picture differed from that of noma, as described by Hennig and Henoch, and it is probable that the two conditions are quite distinct. Many of the author's cases ran a rapidly fatal course, although the children were well nourished and their general health was satisfactory at the onset of the disease. In the case of a girl, aged 12, there was no history of previous illness, but in the other cases there was a recent history of measles, scarlatina, or whooping-cough. The disease began suddenly with high fever and redness, oedema, and pain of the labia majora. This local condition gave place to ulceration and then to gangrene, the disease spreading to the lining of the vagina and rectum, but showing a clear-cut line of demarcation between living and gangrenous tissues. The disease was much more fulminating, the temperature higher, and the deeper structures less involved than occurs in noma. In no case could diphtheria bacilli be found, although a search was invariably made for them.

3. Incubation Period of General Paralysis.

F. WIESEL (*Hygiea*, March 15th, 1924, p. 164) has ascertained the length of the period between the contracting of syphilis and the outbreak of general paralysis in 188 cases observed in the period 1907–20 in various Swedish hospitals. The shortest incubation period was 2 years and the longest 39 years. In most cases the incubation period was between 10 and 20 years, but there were as many as 51 cases, or 27 per cent. of the total, in which the incubation period exceeded 20 years. It was less than 10 years in 36 cases, or 19 per cent. of the total. The average incubation period was 16.6 years. The author failed to establish any definite connexion between the length of the incubation period and such factors as the character of the disease when first contracted, the nature of the treatment given, hereditary influences, degenerative stigmata, physique, alcoholism, or injuries to the head. He observed that when the incubation period was short the disease often terminated fatally in a year.

4. Polycythaemia.

COUCHET (*La vie médicale*, February 1st, 1924, p. 197) states that a very large number of conditions are associated with normal or pathological increase in red blood cells. The former includes the polycythaemia of the newborn, in whom the blood always contains 5 or 6 million red cells, the polycythaemia of altitudes, and that resulting from the use of Kühn's mask or stenosis of the upper respiratory tract. Pathological polycythaemia includes cases due to loss of water, such as that caused by vomiting and diarrhoea, and tumours which may increase the number of the red cells. Stenosis of the oesophagus and pylorus, by interfering with drinking, have the same effect. Cardiac and pulmonary affections which determine stasis or cyanosis are also accompanied by a compensatory increase in red cells. Many intoxications, especially those due to arsenic, carbon monoxide, lead, and mercury, have a similar action. Finally, there are cases of plethora on the borderland between health and disease which have been attributed to disease of nutrition, such as gout or diabetes. In Vaquez's disease, which is allied to this group, the number of red cells may be as high as 13 million (Koester) or even 19 million (Alexander). As a rule it is about 8 to 10 million. The haemoglobin is usually increased, and may be as high as 120 to 150 per cent. The number of leucocytes is also increased, being usually about 10,000 per c.mm., and sometimes as high as 100,000 or 150,000. The leucocytes may show a large number of lymphocytes or otherwise exhibit a distinctly pathological tendency, their formula resembling that of myeloid leukaemia with more or less numerous myelocytes. In addition to changes in the blood, the bone marrow is in an obvious state of excessive function. On naked-eye examination it is red and spongy, and microscopically shows signs of active proliferation. The patients complain of dyspnoea, nausea, alternate constipation and diarrhoea, intense thirst, vertigo, headache, insomnia, and a sense of fatigue. The pressure of the cerebro-spinal fluid is increased. The urine frequently contains albumin and casts. The heart is increased in size and often shows signs of muscular insufficiency. The prognosis is not absolutely bad, as patients may live for thirteen years or more, but it is not very good, as recoveries are very rare if they occur at all. Treatment consists in administration of drugs, and other measures which tend to destroy the red corpuscles, such as benzol and phenylhydrazine, and application of x rays or radium, and the removal of the marrow of the long bones.

5. Stomach Changes following Syphilitic Peritonitis.

J. A. R. SMIT (*Nederl. Tijdschr. v. Geneesk.*, March 1st, 1924, p. 899) remarks that peritonitis is a frequent occurrence in syphilis and may assume various forms. It may be almost entirely serous, so that the condition can readily be mistaken for tuberculous peritonitis. The fibrous form, however, is more frequent than the serous, and may be primary or secondary to wounds of the peritoneum or other morbid processes such as wandering kidney. In such cases it may give rise to all sorts of malformations of the various abdominal organs, including hour-glass contraction of the stomach resembling that following gastric ulcer. Smit records four cases of hour-glass contraction of the stomach in syphilitic subjects, but with the exception of one patient who had a slight feeling of heaviness in the stomach after meals none had any gastric symptoms, nor did any show evidence of gastric ulcer on x-ray examination. All, however, had a more or less characteristic hour-glass contraction, which at first was mistaken for gastric carcinoma. In the three cases in which it was employed antisyphilitic treatment caused a disappearance of the hour-glass appearance of the stomach.

6. Tachypnoea in Lethargic Encephalitis.

K. MOTZFELDT (*Norsk Mag. f. Laegevidenskaben*, March, 1924, p. 225) draws attention to a comparatively rare sequel to lethargic encephalitis—short bouts of very rapid breathing. These bouts may occur several times an hour, lasting only three to five minutes, being characterized by noisiness and a rate of 40 to 50 to the minute. There is no regularity in their sequence, and no sign of the Cheyne-Stokes phenomena. One of the author's patients could restore at will his breathing to the normal rate and character. Discussing the mechanism of this type of respiration, instances of which have been recorded by other writers in connexion with lethargic encephalitis, the author suggests that it may indicate involvement of the thalamus, and, as Bailey and Bremer have shown (*Arch. Int. Med.*, 1921), experimental lesions of the hypothalamus of dogs often provoke violent but brief attacks of tachypnoea.

7. Summer Diarrhoea of Infants.

A. YLPPÖ (*Acta Paediatrica*, vol. 3, fasc. 2, 1924, p. 213) notes that for many years a controversy has raged over the etiology of summer diarrhoea in infants, the view that it is due to bacterial contamination of the milk supply before it reaches the infant not being universally accepted. There is another view, according to which this form of diarrhoea is directly due to a high atmospheric temperature which raises the infant's temperature and thereby upsets the chemical reactions in the gastro-intestinal tract. In support of this view the author records experiments the basis of which was

an observation made on a warm day early in May, 1920, when several prematurely born infants in a hospital were exposed to sunlight for a considerable time. They all showed a marked rise of temperature followed by diarrhoea and vomiting. Following up this observation, the author investigated the acidity of the gastric juice of several children before and after artificial pyrexia had been induced. This pyrexia was induced in some cases by hot baths and packs, and in other cases by the intracutaneous injection of a 1 in 10 dilution of calf lymph intended for vaccination. In several cases it was found that pyrexia was associated with a definite reduction of the acidity of the gastric juice, and the author is therefore inclined to think that the summer diarrhoea of infancy may in many cases be due to an inadequate secretion of hydrochloric acid, the acidity of the gastric juice not being great enough to destroy the bacteria of the typhoid and dysentery groups.

Surgery.

8. Ligature of the Popliteal Vein for Varicose Veins in the Leg.

C. BERTONE (*Acta Chir. Scand.*, May 7th, 1924, p. 539) draws attention to Parona's publication in 1904 on the treatment of varicose veins in the leg by ligature of the popliteal vein. He was convinced that superficial varicose veins were almost always secondary to varicosity of the deep veins in the leg, and that to effect a radical cure it would be most rational to ligature the popliteal vein. His record of twenty-six cases thus treated confirmed his theoretical considerations. Bertone admits that this treatment is not always suitable. Many cases are cured completely by resection, ligature, or artificial thrombosis of the saphenous veins, which can be operated on with greater ease and less risk than the popliteal vein. But this should be ligatured when (1) no benefit has followed operations on the superficial veins, and painful ulcers and swellings persist, and when (2) there are deep varicose veins causing oedema of the calf and ankle and the persistence of large varicose areas in the skin. The author describes five cases in which he successfully performed this operation.

9. Cystinuria.

A. HARRIS (*Surg., Gynecol. and Obstet.*, May, 1924, p. 640) points out that cystin is an intermediate product of metabolism, but it is not properly understood how cystinuria is produced. The substance is an amino-acid containing 25 per cent. of sulphur. It comes from the tissues of the body, since cystin given in the food does not increase the amount. It is increased on a mixed diet containing nitrogen and sulphur. Cystinuria is a rare condition and occurs about once in 30,000 analyses. It occurs at all ages, but more commonly in young adult males. Many cystinurics are of a neurotic type. It appears that most cystin stones are opaque to the *x* rays. There is a marked tendency in some to the re-formation of stone: only a more complete knowledge of the body chemistry will carry us to a point where calculi can be prevented, and will not recur after removal. There appears to be a strong hereditary tendency to cystinuria and the formation of stones. In the case of a girl, aged 16 years, five stones had been passed during a few months: two other members of the family had cystinuria, and two others showed a marked excess of oxalates. Later a pure cystin calculus was removed from the kidney by operation. In spite of diet, alkali therapy, and other measures, urine analysis still shows the presence of cystin crystals.

10. Mixed Tumours of the Pharyngeal Prolongation of the Parotid.

HENRY PROBY (*Arch. Internat. de Laryng., Otol. et Rhinol.*, March, 1924, p. 302) describes this prolongation as a conical process with its apex inwards, which lies in front of and above the stylo-mandibular ligament and behind the sphenomandibular ligament. Between these ligaments it passes inwards into the subparotid space, and has a covering of deep cervical fascia. It has as anterior relations the internal maxillary and middle meningeal vessels, the pterygoid plexus of veins, and the branches of the mandibular division of the fifth nerve. When the process is large it becomes an external relation of the tonsil, and it lies posteriorly on the stylohyoid and stylo-glossus muscles. The mixed tumour occurs more frequently in males than in females, and more often in young subjects. It appears at an earlier stage in the pharynx than on the surface, and presents between the pillars of the fauces, displacing the tonsil inwards. When the tumour is palpable in the parotid region, and is moved, its movement is communicated to the pharyngeal tumour. Speech, respiration, and deglutition may be affected, and the tumour may ulcerate into the pharynx. There is usually no palpable glandular enlargement, and the diagnosis must be made from benign and malignant tumours. The former are rare; sarcomata grow much more rapidly, the tumour is larger, and there are palpable glandular deposits. Lymphadenoma is usually bilateral, the tonsils are much larger and grow more rapidly. Secondary malignant glands in the neck must be differentiated from the mixed tumour, especially when they are secondary to a malignant ulcer of the pharynx. When ulceration has taken place the diagnosis must be made from syphilis and tubercle. On section the tumours show three types of tissue: (*a*) connective tissue elements, such as mucous, fibrous, and cartilaginous; (*b*) epithelial elements, including masses of Malpighian cells, globular masses of epidermal cells with centres of degenerate keratinized cells, columns of basal cells, and gland-like tubules; and (*c*) cells of an indifferent type. The tumours as such can be classified, after Letulle and Nattan-Larrier, as (1) monsters which contain recognizable organs; (2) teratoid tumours which contain all the three layers of the embryo; (3) mixed salivary tumour with myxo-chondro-epithelial tissue; and (4) simple tumours such as naevi. There are three theories as to the origin of these tumours. There is the nodal theory that when the fertilized ovum first divides each division has the power to produce an embryo. Occasionally one of these divisions pursues an individual development and the result may be anything from an identical twin to a mixed tumour. The second theory is that these tumours are due to the inclusion of epithelial and mesoblastic tissue at the time of disappearance of the branchial arches. The third theory is that the tumours are formed in buds of epithelium which separate off from the buccal mucosa at the time when the salivary glands are being formed. These buds become cut off from the surface, are developed by the growing gland, and later develop into one of the forms of mixed tumour. This series of phenomena has not been proved, but a similar series takes place in the cases of the thyroid, kidney, and pancreas.

11. Tumours of the Mediastinum in Children.

J. S. STONE (*Annals of Surgery*, May, 1924, p. 687) records two cases of tumour of the mediastinum in children. Both had an acute onset, simulating pneumonia, and in both a secondary empyema was suspected, and because of that the patient was sent to hospital for operation. In each case the left side of the chest was flat and dull over practically the entire extent; *x* rays showed diffuse shadows and the evidence of tumour was not definite. The fluid removed by aspiration was blood-stained; in one case—a teratoma—hairs were detected in the fluid withdrawn. The difficulty of diagnosis is emphasized, and the need of careful examination. One case was epithelial in origin and probably arose from the pleura; it occurred in a child 4½ years of age. The second case was a teratoma, and probably arose as a blastomere which had become displaced in the course of development. A review of 108 cases of mediastinal dermoids and teratomata previously reported is given: only eight of these have occurred in children. The only treatment of these conditions is surgical, if symptoms due to pressure are present. In both the above cases operations were performed, but the children subsequently died.

Neurology and Psychology.

12. Psycho-neuropathic Complications of Otitic Disease.

SPALAIKOVITCH (*Rev. de Laryng., Otol. et Rhinol.*, April 15th, 1924, p. 228) describes two cases in which symptoms of intracranial mischief followed suppurative otitis media of some standing; in both cases a mastoid operation had been performed some time previously. The first patient was a girl who had had otorrhoea for nineteen years, and a complete mastoid operation had been performed. Two months after the operation severe pain developed in the ear and the corresponding side of the head. Later she passed into semi-coma, lay motionless in bed, and was only roused with difficulty. The ear was in good condition, there were no abnormalities in the nervous system, the temperature and pulse were normal, and her condition was diagnosed as psycho-neuropathic. No amount of suggestion was of any avail, and eventually, under general anaesthesia, a post-auricular incision was made, sutured, and an enormous dressing applied. The wound was elaborately dressed and the sutures removed a few days later. The wound healed perfectly and the symptoms entirely disappeared, with no recurrence. The author contrasts this case with one in which a large cerebral abscess gave rise to no symptoms other than a moderate degree of coma, and was only diagnosed because there was a history of a previous similar abscess in the same patient on the same side. The first case was diagnosed by the lack of localizing symptoms, by the

normal pulse and temperature, by the normal cerebro-spinal fluid, and the discrepancy between the acute pain in the ear and the very healthy condition of that organ. The second case of simulated endocranial symptoms was a man of 34 who had had a mastoid operation seven years previously. His symptoms suggested labyrinthine irritation and included spontaneous nystagmus, a tendency to fall to the left and backwards, and some vertigo. Two months later he came back with much more pronounced symptoms of incoordination and ataxy, much deafness on the healthy side, considerable reduction of the visual fields of both eyes, and very severe headache. Discrepancies between the severity of the symptoms and the amount of pathological change discoverable gave rise to the diagnosis of psycho-neurotic simulation. He was given spectacles with glasses of different colours, and found that he regained his stability best with green glasses. These he wore for about a fortnight, after which he left the hospital cured of his intracranial symptoms. Such pseudo-complications are somewhat more common in the female sex and occur more often during adolescence; the patients show other signs of neurosis in many cases. These symptoms would not arouse much interest if they did not arise in association with a suppurative aural lesion which lends a very considerable gravity to their interpretation. It is stated that hysteria never completely simulates the symptomatology of a given lesion, but in some of the cases described the similarity is very close. Careful examination reveals some discrepancy—for example, in cases of mastoid tenderness, when the attention has been strongly engaged, deep and forcible pressure on the mastoid evokes no attempts at resistance. The first rule in treatment is to obtain the confidence of the patient, and the second is to retain it.

13. Psychology of Childhood.

YVONNE E. WINSLOW (*Internat. Zeit. f. Individual Psychologie*, January, 1924, p. 36) insists on the great importance of childhood influences, their effect on the ensuing adult life, and their ultimate influence on human happiness. Parents have to learn the importance of the study of their children's individuality, and must seek to encourage and develop this individuality rather than impress their own personality and authority on their children. "We have been hindering the young from a free and harmonious development of their natural powers to a complete and consistent whole, and this need not be." Children are shy and reticent, while parents too often forget their own experiences in childhood and fail to give encouragement to their children. Children are also very impressionable and do not for many years escape from the control of the opinions of their elders. They need to be removed from the "family psychology," as it is most important, in order to obtain a broad and sane outlook, that children should not develop their ideas entirely under family influence. The spoiled child is as striking an example of this error as is the repressed child. Few adults (the author argues) are aware how the sensitive and talented child suffers from being misunderstood, from injustice and unrecognized longings, and how dependent he is upon his elders' affections. Children of this kind often suffer mental and spiritual anguish because their emotions are much more developed than are their reasoning powers. For the same reasons they should be guarded against emotional strain and be protected from gruesome stories and pictures.

14. Mental Disorder and Intestinal Stasis.

R. V. STANFORD and E. GOODALL (*Brit. Journ. of Radiol.*, February, 1924, p. 63) report on the examination of 24 patients suffering from mental disorders of different kinds by means of barium meals and radiograms taken at intervals during the succeeding forty-eight hours. The disorders included melancholia, delusional insanity, and exhaustion psychosis; of the 24 cases 19 were recent and acute, the others being of longer standing. Only 2 of the 24 cases seemed to be free from some abnormal state of the gastro-intestinal tract; this confirms the previous investigation of these authors in 1921, when out of 10 cases similarly examined 7 presented definite intestinal abnormalities. The evidence pointed in some cases to stasis, to ptosis of the transverse colon—in some cases of the stomach also—and to spastic contraction in several instances. Four cases are described in some detail.

15. Occupational Psychology and Fatigue.

W. NUTTALL (*Internat. Zeit. f. Individual Psychologie*, January, 1924, p. 12) considers that experimental research is of practical value in the study of occupational psychology, and more especially with regard to the choice of an occupation. Much has been accomplished in this way, but experimental tests and classification of reactions do not solve the problem completely. Even though these tests indicate an aptitude for a certain calling, it does not follow that the individual will do that work properly, nor that he will be happy in that occupation, nor that he will be able to obtain the particular work for which he appears to be suited. There is much latent talent in children which may be developed by encouragement, or checked by the failure of parents or teachers to discover its existence. Attention should be directed not only to choice of occupation but also to the individual's attitude towards work in general. There are many disillusioned individuals in the world to-day who make no attempt to follow their calling, and who furthermore discourage others. Nuttall concludes that it is highly important to encourage a courageous and adaptable outlook towards work; and that the problem of industrial fatigue is wider and deeper than consideration of physical environment in mills and workshops—it is a problem of conflict between the world outlook of the individual and that of the society into which he happens to be born.

Obstetrics and Gynaecology.

16. The Placentas of Syphilitic Foetuses.

C. MÖNCKEBERG and M. AVILÉS (*Gynécol. et Obstét.*, 1924, ix, 5, p. 419) have made systematic microscopic examinations of the placenta, cord, and membranes in 50 syphilitic foetuses: in 41 cases the Wassermann reaction was positive. The placentas were found macroscopically to be pale, friable, and oedematous; they weighed from 25 to 51 per cent. of the foetal weight, in comparison with the normal figure of 14 to 16 per cent. in non-syphilitic cases. Infarcts visible to the naked eye were present in 32 per cent., and one-half of the whole series were characterized clinically by placental retention. Microscopically the authors noted hypertrophy of the villi, in which the cells of the syncytium and Langhans's layer shared irregularly; the contained veins and arteries showed very considerable proliferation in the tunica intima, with intravascular thrombi. In the majority of cases the vessels were increased in number and dilated, giving an angiomatous appearance. Infarcts were microscopically demonstrable in 80 per cent. of cases. The vascular lesions, with the exception of angiomatous formations, were found also in the external portions of the placentas and in the thickened membranes. In the amnion the authors describe a leucocytic infiltration of the subendothelial connective tissue, accompanied in certain cases by enormous hypertrophy of the endothelial cells with formation of a pseudo-syncytial tissue. In the cord the chief lesions noted were intense pan-arteritis and phlebitis, with almost complete arterial obstruction. In cases in which syphilitic changes in the villi were of slight intensity the morbid lesions were well marked in the remaining portions of the placenta and in the membranes. When stillbirth took place shortly before term placental changes were comparatively small, but the vascular lesions in the cord, on the contrary, were well marked. In none of their cases were the authors successful in finding the *Treponema pallidum* in the placenta.

17. Does Puerperal Disease Contraindicate Suckling?

H. RUNGE and A. LAUER (*Deut. med. Woch.*, May 9th, 1924, p. 602) have carried out investigations at the University Maternity Hospital at Kiel with a view to obtaining an answer to this question. As many as 54 women who were febrile in the puerperium were allowed to continue suckling their infants. In 14 cases, or 26 per cent., the infants thrived perfectly well. In most of these cases the fever was only of a few days' duration and was due to slight puerperal endometritis. In 25 cases, or 46 per cent., the infants suffered from a deficiency of milk, but only in one case were there signs of infection of the infant as indicated by a rise of temperature and an unsatisfactory condition of the stools. Apart from this case and the fact that supplementary artificial feeding was often required the experiment was satisfactory in this group also. The diseases from which the mothers suffered were infiltration of the parametrium, and endometritis, with periodic bouts of septic fever. In about half the cases the mother's fever disappeared and her milk supply improved so soon that it was not necessary to resort to supplementary artificial feeding. In no case was the infant's life threatened. In 15 cases, or 32 per cent., the mother's disease was severe or moderately severe puerperal fever. In 12 of these cases it was observed that though the supply of maternal milk was quite adequate the infants lost weight on it temporarily and showed certain other morbid signs such as enteritis and fever; but in every case but one these manifestations were transitory, and the only infant that died of sepsis had been prematurely born, weighing only 2,100 grams. The authors conclude that suckling should not be continued when puerperal fever is severe and prolonged, not so much for the sake of the infant

as for that of the mother. Slight puerperal conditions such as thromboses, localized inflammation of the parametrium, and ascending gonorrhoea do not warrant the discontinuance of suckling.

18. Ethylene-Oxygen Anaesthesia in Obstetrics and Gynaecology.

N. SPROAT HEANEY (*Surg., Gynecol., and Obstet.*, May, 1924, p. 692) reports that since the discovery by Luckhardt and Carter in 1918 of the physiological effects of ethylene this gas has been given an extensive and successful trial as a general anaesthetic in the gynaecological and obstetrical departments of the Presbyterian Hospital of Chicago. It is administered with oxygen in the apparatus used for nitrous oxide-oxygen anaesthesia. For diagnostic examinations it is preferable to ether in that it saves time both in the induction of anaesthesia and in the stage of recovery; and to nitrous oxide in that muscular relaxation is better. Usually the patient can leave the room within ten minutes. For vaginal operations ethylene is particularly satisfactory, and is preferred to nitrous oxide ether and to local anaesthesia in aged patients; the operations done included extensive plastic operations and interpositions. For extensive pelvic operations by the abdominal route the additional administration of ether is sometimes necessary. In labour ethylene has superseded in the author's practice nitrous oxide; analgesia is more quickly obtained, painlessness may be maintained for so long as eight hours, the strength of the uterine contractions is less affected than by ether, the foetal heart tone is not influenced, and the child breathes as quickly after birth as is the case with nitrous oxide anaesthesia. One of the disadvantages of ethylene to which allusion is made is its extreme explosiveness.

19. Blood Sedimentation Test in Obstetrics.

FRIEDLAENDER (*Amer. Journ. Gynecol. and Obstet.*, February, 1924, p. 125) has investigated the sedimentation time in 1,500 gynaecological and obstetrical cases, and comes to the conclusion that the test is of the greatest help in some cases. The time taken for sedimentation in a healthy woman is about twenty hours, whereas in pregnancy and with infections it occurs in a few minutes. The reaction is, however, uncertain during the first three months of pregnancy, but it is said to be of use after that time to differentiate between abnormal pregnancies and ovarian cysts, fibroids, etc. Its greatest value is in cases of adnexitis with a normal temperature and blood count, when there is doubt regarding the desirability of operation, and the author states that sedimentation occurring in under thirty minutes means an acute infection, under one hour means latent infection (and operation should never be undertaken in such cases), whereas sedimentation taking two hours or more to occur excludes the possibility of any latent or acute infection and operation can be safely undertaken. Friedlaender even goes so far as to state that no dilatation and curettage should be performed until latent infection of the genital organs has been excluded by the sedimentation test. A quick sedimentation, he says, does not necessarily mean acute infection of the genital organs, as it is given in all acute infections such as appendicitis, cholecystitis, etc., and in some cases a previously unsuspected form of disease has been found at an operation owing to the evidence given by accelerated sedimentation and the operation being continued until its discovery.

Pathology.

20. Beri-beri and Avitaminosis.

T. OGATA, S. KAWAKITA, S. KAGOSHIMA, S. SUZUKI, and H. OKA (*Japan Med. World*, February 15th, 1924, p. 23), from observations upon avitaminosis (polished-rice disease) caused by lack of vitamin B, conclude that it presents markedly different symptoms and tissue changes from beri-beri, and that the two diseases are entirely different. In avitaminosis the vitamin B content is much less than normal, whereas there is no marked difference between the content in beri-beri and non-beri-beri cases. Wide differences exist between the nervous systems in the two diseases, and, while circulatory disturbance is one of the cardinal symptoms in beri-beri, in avitaminosis it is of an entirely different type. In beri-beri respiratory difficulty accompanies the increasing pulsation, whereas in avitaminosis respiration becomes slower. The digestive disturbances in beri-beri are not so marked as in avitaminosis; and, as regards blood findings, the hyperglycaemia and lymphopenia occurring in avitaminosis are not characteristic symptoms of beri-beri. While in beri-beri there is some rise of temperature, in avitaminosis the temperature is often below normal. Differences are seen in the pathological changes in the suprarenals, the cortex in avitaminosis being hypertrophied, and the medulla and adrenaline content being normal; whereas in beri-beri the medulla is hypertrophied and the adrenaline content increased. While the generative cells become atrophied in avitaminosis, no obvious change occurs in beri-beri. Resistance to infection is lowered in avitaminosis but not in beri-beri, and from all these considerations it is concluded that the two diseases are radically different.

21. The Kolmer Test for Syphilis.

J. A. KOLMER (*Journ. Lab. and Clin. Med.*, April, 1924, p. 468) discusses the advantages of his new method of performing the complement fixation test for syphilis, the full details of which will be found in the *American Journal of Syphilis*, 1922, vi, 82. He claims for it a high degree of sensitiveness and of specificity, and states that in a total of over 15,000 tests not a single non-specific reaction has occurred. M. COHEN and S. R. HAYTHORN (ibid., p. 476) have made a comparative series of tests on the serums of patients from diverse sources, using the new Kolmer method and their usual routine technique. The latter is a modification of the original Wassermann sheep system, and is carried out with both a cholesterin-saturated alcoholic extract of human heart and a pure lipoidal acetone insoluble fraction of an alcoholic extract of beef heart. Besides the control tube for the detection of natural antisheep amboceptor, a tube is also put up to measure the anti-complementary properties of the serum. Altogether 1,400 tests were made. Disagreement between the two methods was found in 3.9 per cent. of cases—that is, cases in which the reaction was definitely positive by one method and negative by the other. A careful examination, however, of these cases showed that they came mostly from patients in the later months of pregnancy or from patients receiving antisyphilitic treatment. Minor disagreements were found in the partially positive tests, but here the variations were rather in degree than actual contradictions. Again, in fifteen of the tests a difference was found in the anti-complementary titre of the serum. On the whole, it was found that Kolmer's test gave the larger number of positive results in treated syphilis; here the reaction persisted with his antigen after it had disappeared even with the cholesterinized antigen. In the later months of pregnancy, too, Kolmer's test gave a higher proportion of positive results. Summing up, Cohen and Haythorn conclude that the Kolmer test is an excellent one, but that it appears to be open to most of the errors inherent in the routine method. They reserve final judgement upon its value until they have extended their comparison. W. H. KELLOG, A. WELLS, and D. BECK (ibid., p. 481) have likewise investigated the Kolmer method comparatively, and find that its delicacy is due to the particular antigen used, and to the adjustment between the volume of blood cells, the complement unit, and the total volume of the test. Noguchi's antigen gives stronger reactions in definitely positive serums, but it is of less value in the weakly positive ones. They conclude that the Kolmer test is of value as a standard of comparison, and seem to favour its introduction for general use.

22. Local Skin Immunity to Anthrax.

ACCORDING to Besredka, the skin is the only part of the body which is susceptible to anthrax; if the organisms are injected into the skin a progressive infection ensues. If injected intravenously, intraperitoneally, or even subcutaneously, with adequate precautions against wounding the skin, no infection results and the animal remains well. Moreover, just as the skin is the only organ which is susceptible to anthrax, so is the skin the only organ which can build up an immunity to anthrax. After injecting the vaccine intracutaneously the animal becomes immune, but if it is injected in any other situation the animal remains susceptible. To verify these statements S. TADA (*Centralbl. f. Bakt.*, April 30th, 1924, p. 477) has conducted certain experiments on guinea-pigs, taking care to arrange them in accordance with Besredka's technique. In general the animals were given one-tenth of a loopful of Vaccine 1, followed a week later by one-tenth of a loopful of Vaccine 2, followed a week later by half a loopful of the same vaccine. In some cases a third injection of this vaccine was given. About ten days after the last dose of vaccine the animal was injected subcutaneously with one-thousandth of a loopful of a living virulent culture of *B. anthracis*. In one series of experiments the animals were vaccinated cutaneously, in another subcutaneously, and in a third intramuscularly. In each case 6 animals were used, together with 3 unvaccinated controls. The results were quite clearly defined. In each case 3 of the vaccinated animals died and 3 survived; the 3 control animals invariably succumbed. He concludes therefore that the skin does not play any special role in immunity to anthrax; this immunity can be obtained equally well by cutaneous, subcutaneous, or intramuscular vaccination.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

23. Serum Therapy in Pneumonia.

G. ÉTIENNE and M. BRAUN (*Rev. Méd. de l'Est*, April, 1924, p. 211) are convinced of the efficacy of serum therapy in pneumonia. They record 25 cases treated by a serum of the Pasteur Institute prepared by M. Cotoni. In 13 lobar pneumonias so treated there was a rapid resolution of fever by crisis in from one to seven days—twice by a single fall of temperature and three times with intermediate rises. The ages of the patients ranged from 17 to 63 years, and all were suffering from marked pneumonia, with grave symptoms in most instances. In 2 cases the first injection acted almost immediately, in others a steady fall by lysis was observed, whilst in one case, although there was no effect on the temperature, the general condition strikingly improved. The serum injections were instituted from the second to the fifth day. In 6 cases of bronchopneumonia rapid lysis was produced in 4 instances, generally in four waves, and commenced within thirty-six hours in 3 cases. Treatment was begun from the second to the sixth day and, in one patient, on the twenty-first day. Several of these cases were of a profound toxic type—one girl of 17 years seemed moribund when first seen, but recovered. Four types of reaction to the injections of serum were noted: (1) reduction of temperature by crisis in 54 per cent. of the cases; (2) early fall of temperature by lysis in 30 per cent.—these were the earlier observed cases treated with doses obviously too small; (3) early fall of temperature followed by defervescence in a series of large oscillations; (4) the general condition markedly improved without obvious effect on the course of the fever. It is noted that favourable modification of the symptoms was general, and was often even the initial and most striking result observed; it occurred within twelve hours in 5 of the cases. The authors particularly stress the constancy of the effect on the blood. From the first injection the leucocyte count rapidly fell, and this steadily continued. An accompanying lymphocytosis was regarded as of favourable prognostic import. The authors regard the diminution in the number of leucocytes as corresponding to a reduced call on the defensive mechanism of the body. They note the apparent discrepancy between the general improvement and the fact that the local lesion remained practically unaltered in the majority of the cases. In their series there was only one fatal case, and the results in bronchopneumonia were as good as in the lobar type. They would employ the treatment in all cases of the former, whilst they do not consider it should be reserved only for very serious cases of the latter and when danger is threatening. In their experience immediate reaction is by no means certain; in fact, it did not occur till as late as sixty hours in some of the cases. A dose of 80 c.cm. is recommended, or in less severe cases 60 c.cm.; smaller doses do not produce such a rapid fall of temperature. Daily injections should be given, according to the effect obtained, sometimes for two or three days. If reduction of fever is slow another injection is advised. Where relapse occurs after ten days' apyrexia further injections have been found to produce a favourable serum reaction without anaphylaxis.

24. Insulin Treatment of Diabetes.

C. VON NOORDEN and S. ISAAC (*Klin. Woch.*, April 22nd, 1924, p. 720) record further experiences of insulin treatment in diabetes mellitus. The most striking results of insulin are to be found in cases of pre-coma and commencing diabetic coma. By fasting and large doses of alcohol von Noorden was formerly able to check many cases of commencing coma; but insulin gives much better results. In coma large doses of insulin are required. Each dose should usually not exceed 30 units, and three hours should elapse between them. Dextrose injections may be required as emergency treatment at any moment, and the practitioner must therefore be prepared. The authors have so far lost no case of coma treated with insulin. An endeavour should be made to obtain the good results in the usual insulin treatment with small doses. As a temporary measure doses of 80 to 120 units daily may be necessary; for treatment extending over long periods of time 40 to 60 units. An introductory course of dieting, with insulin, should be given for three to six weeks to regulate the sugar metabolism; then a permanent diet and insulin treatment, which the patient can carry out at home. In the latter treatment, under the influence of insulin, as a more liberal diet and a suitable amount of fat may be allowed, the patients increase in weight and general health. The insulin injections may be restricted to twice daily. In the most severe forms of diabetes it is too early to judge what the value of the insulin treatment will prove to be. In cases of medium severity, by careful dietetic treatment a decidedly better condition of metabolism is often produced, or further advance of the disease is checked. These are the cases (apart from coma) in which insulin has been of the greatest service. Astonishing results are obtained not infrequently by a long-continued combination of dietetic and insulin treatment. In some cases, though the diet has remained approximately the same as had been taken for months or years, the insulin treatment, in spite of persisting glycosuria (scarcely diminished), has improved the general condition and the bodily and mental activity in a surprising manner. In mild, and especially in early, cases of diabetes dietetic treatment alone, before its combination with insulin, is to be preferred for a time.

25. Mechanism of Peripheral Stasis in Myocardial Insufficiency.

E. P. BOAS and G. DOONEIEF (*Arch. Intern. Med.*, April 15th, 1924, p. 407) have found in several cases of myocardial insufficiency a low capillary blood pressure: they therefore disagree with the hypothesis that with failing heart action there is a rise in pressure in the right auricle which impedes the venous flow to the heart, followed by venous engorgement and a rise of venous and capillary blood pressure. They agree with Mackenzie that the primary cause of a failing circulation is weakness of the heart muscle. "Dropsy and venous and hepatic engorgement are usually spoken of as signs of back pressure, but they are probably due to an inefficiency in the driving power. The blood passes through the capillaries at a slow rate, impairs their nutrition, and allows transudation to take place." Boas and Dooneief have made repeated observations in 19 patients, noting clinical signs and symptoms, and measuring the venous and capillary pressures. The former was first estimated by means of a manometer filled with 2 per cent. sodium citrate solution connected with the interior of a vein by a needle which remained *in situ* for a considerable time. The capillary pressure was measured from thirty to sixty minutes later. The authors found that when certain patients showed significant variations of venous pressure there was no constant parallel alteration of the capillary pressure. Full details of the observations are given. The authors found also that a venous pressure as high as 39 cm. of water might have no effect on the capillary pressure. Boas has previously reported (ibid., July, 1922) cases of high capillary pressures associated with hypertension; the present observations "demonstrate conclusively that these high readings were not determined by a high venous pressure."

26. Treatment of General Paralysis with Malaria.

V. ASKGAARD (*Ugeskrift for Laeger*, April 10th, 1924, p. 307) has treated with tertian malaria 37 patients suffering from general paralysis, the observation period since the completion of treatment ranging from two months to a year. The first two patients were sent from Denmark to Vienna to be inoculated with tertian malaria, and the strain thus obtained was kept alive at the St. Hans Hospital in Denmark by human passage. Sometimes early cases of general paralysis suitable for treatment with malaria were not available, and in order that the strain should not die out advanced cases of general paralysis were employed as human thermostats, their presence in the series of treated cases tending to obscure the good results. Of the 37 patients, 12 were restored to complete fitness for work, and showed no serious psychic symptoms, 8 were bettered, becoming partially fit for work, 12 were unaffected, 1 became worse, 2 died, and 2 were readmitted to hospital. By withdrawing from his series the 6 patients who were unsuitable for this treatment, and who were given it mainly in order that they might serve as thermostats, the author shows that good results were obtained in about 65 per cent., and that complete fitness for work was restored in over 38 per cent. Though he often observed transitory ill effects, such as flagging of the heart, partial loss of consciousness, pain in the left side of the body (due, perhaps, to enlargement of the spleen), he had to record no death or attack of pneumonia in connexion with this treatment, which he continued in each case until there had been ten bouts of fever, provided the patients were strong enough. When they were not, he had to be satisfied with

only six to eight bouts. He was invariably successful in eradicating the malaria by intermittent treatment with quinine. He adds the warning that this treatment should not be attempted till it has been shown that the patient does not suffer from quinine idiosyncrasy.

27. Gastro-intestinal Haemorrhages in Tabes.

S. POLIAKOFF (*Nederl. Tijdschr. v. Geneesk.*, March 29th, 1924, p. 1396), who records an illustrative case, states that only a few examples of gastric crises in tabes associated with haemorrhage have been recorded. Neumann in 1915 could find only ten examples in the literature, and even some of these were doubtful. As none had received surgical treatment, it could not be ascertained whether an ulcer was not the cause of the gastric crises. In view of the fact that tabetic patients have a special tendency to develop gastric ulcer, the diagnosis of gastric crises with haemorrhage should be made with caution. As regards rectal crises in tabes, Poliakoff, from a study of the literature and his own observations, distinguishes the following varieties: (1) ordinary rectal crises, with pain and tenesmus; (2) parenchymatous haemorrhages, as described by Bensaude and Singer, resulting from syphilitic changes in the blood vessels; and (3) haemorrhagic rectal crises, which are presumably a combination of (1) and (2). While in the cases described by Singer and Bensaude the blood vessels had undergone such extensive changes that normal variations in the blood pressure were sufficient to cause haemorrhage, in Poliakoff's case the high blood pressure was responsible. Poliakoff is of opinion that there may be a similar condition in the stomach to that in the rectum, and that syphilitic changes in the blood vessels of the stomach may be the cause of gastric crises, with or without haemorrhages.

Surgery.

28. Traumatic Gastric Ulcer.

K. MATTISSON (*Hygiea*, May 31st, 1924, p. 321) has investigated the records of two Swedish hospitals and has found 25 cases, or 1.5 per cent. of all the cases of gastric ulcer, with a history of injury occurring directly or a few days before the first appearance of symptoms of gastric ulcer. In as many as 12 of these cases the interval between the injury and the symptoms was less than two days, and in most of these cases there was hardly any interval between the two events. A classification of the injuries inflicted showed that 6 consisted of blows on the epigastrium, and as many as 14 were straining injuries such as might be caused by lifting or extreme positions of extension or flexion. In one case the development of a gastric ulcer was traced to a fish bone. The author discusses the possibility of a gastric ulcer having existed in such cases without giving rise to symptoms before an injury, but he does not consider that this explanation is sufficient altogether to discredit the view that an injury may give rise to a gastric ulcer.

29. Statistics of Strangulated Hernia.

G. W. ALIPOW (*Zentralbl. f. Chir.*, May 17th, 1924, p. 1090) states that from January 1st, 1905, to January 1st, 1914, 1,231 cases of hernia, of which 174 were strangulated, were treated in the hospital at Penza (Russia). In 172 cases the strangulation was unilateral, in one it was bilateral, and in one it occurred first on the right side and a fortnight later on the left side. Among 176 cases 131 were inguinal, 33 femoral, 11 umbilical, and one was a ventral hernia following operation. In 22 the hernia was congenital. The ages of the patients ranged from 1 to 45; six were under 10. Peritonitis occurred in 12, usually four or more days after strangulation; in one case peritonitis developed as early as twelve hours after operation. 138 patients submitted to operation; the remainder were admitted to hospital moribund or refused operation, and all but one died. The results of operation were as follows: The mortality in strangulated hernia of twelve hours' duration was 4.9 per cent., of nine days' duration 40 per cent., and of longer duration 30 per cent. Attempts at taxis before admission to hospital led to the following complications: extra- and retro-peritoneal reduction in 3 cases, reduction of a gangrenous gut in 3, partial reduction with perforation in 2, and damage to the bowel in 2. The author urges that attempts at taxis in strangulated hernia should therefore be avoided except when operation is refused and the strangulation is of recent occurrence. Among 138 cases the gut was unaffected in 87, necrosed and grey in places, without thrombosis of the mesenteric vessels, in 20, while changes in the gut and mesenteric thrombosis were found in 27. Post-operative complications were as follows: suppuration of ligatures in 10 cases, cellulitis in one case, bloody stools in one case, abortion fourteen days after operation in one case, and bronchopneumonia in one case. Damage to the vas deferens occurred in two cases, and wounding of the bladder in another two. Out of 87 cases in which no special changes in the gut were found at the operation 8 ended fatally, the causes of death being bronchopneumonia, embolism, cardiac failure, or peritonitis. Of 16 cases in which intestinal resection was performed 6 were fatal—3 from peritonitis and 3 from progressive cardiac failure. In 7 neglected cases of gangrenous hernia and cellulitis of the abdominal wall, of which 5 were fatal, the hernia and gut were merely incised.

30. Osteomyelitis of the Ilium in Children.

C. BEARSE (*Boston Med. and Surg. Journ.*, May 22nd, 1924, p. 883) describes this disease in detail. Its gravity is due to the proximity of the ilium to the hip-joint and peritoneal cavity. The causal organism is usually the *Staphylococcus aureus*. The onset and reaction range, in suddenness and severity, from an extreme systemic reaction, which may mask the local condition, to a slight limp of insidious appearance. Usually there is pain in the region of the hip, fever (104° or more), rigors, vomiting, night cries, local tenderness behind the great trochanter, and leucocytosis. In chronic cases the tenderness may be slight, but swelling accompanied by oedema is frequent in the groin both above and below Poupart's ligament. There is muscle spasm and pain on moving the hip, but with care mobility of the joint can always be demonstrated, showing that the process is extra-articular. Malignant disease, scurvy, and meningitis must be excluded. Perforation of the bone, which may be multiple, occurs early owing to its being a flat bone, and appears on the skiagram as a punched-out area, or a mottled appearance if multiple; in acute cases there is no skiagraphic evidence. Treatment takes the form of early operation, which may include trephining of the bone, removal of sequestra, and, if the condition is extensive, partial or total resection of the ilium, followed by free drainage.

31. Haematoma of the Rectus Abdominis in Hepatic Disease.

P. CARNOT (*Paris méd.*, May 17th, 1924, p. 464) states that this condition was first described by Devé of Rouen in 1923. Only five cases were collected by Devé's pupil, Poulain, in his Paris thesis of 1924, to which Carnot adds two of his own. The condition, however, is probably more frequent than the small number of cases published would suggest. The diagnosis is based partly on the fact that the tumour does not move on respiration, but moves on contraction of the muscles of the abdominal wall. A more certain sign is the late appearance of a subcutaneous ecchymosis at the lower part of the tumour. In Carnot's first case the haematoma appeared in association with other haemorrhages in the last stage of cirrhosis of the liver. The second case occurred in a man, aged 50, who was suddenly seized with violent pain in the right hypogastric region after an attack of coughing. A large tumour rapidly developed beneath the false ribs on the right side. The diagnosis of hydatid cyst or gumma was first considered; but as the tumour was superficial, did not follow the respiratory movements, and took part in the movements of the abdominal wall, haematoma of the rectus was suspected. This diagnosis was confirmed the following day by the appearance of an ecchymotic area at the lower end of the tumour. The swelling gradually subsided. Since then the patient has had some slight digestive and hepatic disturbance and still has a subicteric tint of the conjunctivae.

32. Injections of Defibrinated Blood in Surgical Tuberculosis.

E. KISCH (*Deut. med. Woch.*, May 23rd, 1924, p. 668) reviews the experiences of the 250-bed hospital at Hohenlychen, near Berlin, during the first ten years of its existence. This hospital was established in the lowlands by Professor Bier, who, in addition to practising passive congestion, immobilization, actinotherapy, and other well known procedures in surgical tuberculosis, has found the intravenous injection of defibrinated blood remarkably beneficial. The author, who is in charge of this hospital, states that the donors of this blood were sheep, cattle, horses, and pigs, the blood of the last named provoking the severest reaction, and that of sheep the mildest. This consisted of fever up to 40° C., rigors, pain in the small of the back and head, prostration, flushing of the face, nausea, vomiting, cyanosis, and a rash. Collapse rarely occurred and was never alarming. The dose varied from 1 to 5 c.cm. Six injections were given to each patient, who, in the course of this treatment, received blood from several different animals. Altogether 47 patients were thus treated, the indications for the treatment being great and persistent loss of weight and other signs of severe tuberculosis. Except in the most hopeless cases this treatment not only arrested the loss of weight, but turned the scales so much in the patient's favour that the average gain of weight was between 11 and 12 lb.

Ophthalmology.

33. Observation on Phaco-anaphylactic Endophthalmitis.

A. N. LEMOINE and A. E. MACDONALD (*Arch. of Ophthalmol.*, March, 1924, p. 101) report on 168 patients whom they tested intradermally for hypersensitiveness to lens protein. It has been shown, they say, that about 8 per cent. of persons are hypersensitive to lens protein, and the importance of this observation is most marked in cases of traumatic rupture of the lens and in cases of immature cataract. In those persons who are hypersensitive to lens protein the presence of lens matter free in the anterior chamber will produce an inflammatory reaction which may destroy the eye: this inflammation is called phaco-anaphylactic endophthalmitis. It is possible to discover this hypersensitiveness, and also its degree, by intradermal tests. It has been found that the lens protein of pig's eyes will act in the same way as human lens protein: the intradermal injection of pig's lens protein will produce a local reaction at the site of injection in hypersensitive persons, and by varying the strength of the protein injected the relative hypersensitiveness can be determined. The degree having been determined it is possible, by graduated injections of pig's lens protein, to overcome this hypersensitiveness. This observation, the authors suggest, will probably be of great service in dealing with immature cataracts, as in those cases a large amount of lens matter is often unavoidably left behind, and in hypersensitive eyes will cause trouble. It should be useful also in traumatic cases in which the lens capsule is opened and lens matter extruded into the anterior chamber.

34. Conditions Modifying Refraction.

WM. CAMPBELL POSEY (*Amer. Journ. Ophthalmol.*, April, 1924, p. 270) reviews certain extraneous factors which may have an important bearing on the refraction of the eye, but which are not sufficiently stressed in textbooks. Inflammatory swellings in the lids and conjunctiva, and abnormal conditions in the orbit, may by pressure cause much alteration in the refractive state of the eye. Chronic thickening of the retrotarsal fold, enlarged conjunctival follicles, and deposits of lime salts in the conjunctiva come into this category. A pterygium may cause much distortion of the cornea. Growths of the lids, the most common being chalazia, often produce a marked degree of astigmatism, and after surgical treatment of the chalazion this astigmatism disappears. Pressure from an ethmoidal mucocele, from intraorbital growths, and from tumours of the optic nerve may produce increasing hypermetropia. The ciliary muscle is exceedingly sensitive to toxic influences, and the amplitude of accommodation may be much diminished in toxic conditions. Vascular hypertension and arterio-sclerosis have been noted as causes of ciliary weakness. A change in the accommodation occurs in the prodromal stage of glaucoma, and the effects of disordered sugar metabolism upon the accommodation and refractive state of the eye are perhaps even more generally known.

35. Action of the Sympathetic on the Ocular Blood Vessels.

F. H. ADLER, E. M. LANDIS, and C. L. JACKSON (*Arch. of Ophthalmol.*, May, 1924, p. 239) describe experiments upon the action of the sympathetic on the intraocular pressure. These experiments have particular interest in that it is held by some that the sympathetic is intimately connected with the etiology of glaucoma. Normally, when there is a slow rise of blood pressure the intraocular pressure also rises in proportion. This increase of intraocular pressure is, however, controlled normally by a local vaso-constriction of the ocular blood vessels by means of the cervical sympathetic—a protective mechanism safeguarding the eye from sudden rises of intraocular pressure. When the cervical sympathetic is cut no effect is seen on the intraocular pressure at normal blood pressures, but as the general pressure rises the intraocular pressure goes up much higher than when the sympathetic is intact. These experiments therefore afford experimental proof that there is in the eye a mechanism which can control changes in the general blood pressure as affecting the intraocular pressure, and that this mechanism is innervated by the sympathetic.

36. Unilateral Paralysis of Accommodation.

H. J. FLIERINGA (*Nederl. Tijdschr. v. Geneesk.*, March 22nd, 1924, p. 1302) records a case in a girl, aged 10 years, who had been sent to him because her writing at school had suddenly changed for the worse. On examination she was found to have paralysis of accommodation in the right eye, while the left was normal. She had had a sore throat about six weeks previously. Although a throat culture taken at that time and again by Flieringa proved negative, it was probable that the child had had a mild attack of diphtheria, especially as another child living in the neighbourhood developed bilateral paralysis of accommodation following sore throat six weeks previously. Moreover, no other cause could be found to account for the condition, such as influenza, diabetes, or lethargic encephalitis. Although post-diphtheritic paralysis of accommodation, as a rule, is not complete, it is usually the same in both eyes. Among 100 cases reported by Remak there was not a single example of unilateral involvement. On the other hand, difference in the action of the diphtheria toxin on the two eyes is shown by the case reported by Wiegmann of a boy, aged 12, in whom paralysis of accommodation in the right eye persisted for three years, whereas that in the left eye cleared up much earlier. The question why the right eye alone was affected in Flieringa's case is difficult to answer. According to Edinger's theory, toxic paralysis is most likely to occur in the nervous area which does most work, but this theory is not applicable to the eyes, which are both accommodated to the same extent. Recovery took place in about eight weeks without special treatment, beyond forbidding the patient to write.

Obstetrics and Gynaecology.

37. Paroxysmal Hypertension following Eclampsia.

J. HEITZ (*Arch. Mal. du Cœur, des Vaisseaux et du Sang*, May, 1924, p. 295) states that after eclampsia there may occur every stage between permanent vascular hypertension and typical "hypertensive crises" in which the blood pressure rises abruptly and returns to the normal at the end of the crisis. The majority of such crises spring from a more or less definite condition of hypertension, and the paroxysm frequently coincides with some attack of severe pain, particularly angina pectoris. Several French and English authors have reported variations of blood pressure, sometimes amounting to 60–80 mm., coinciding with the crisis and terminating with it, and H. Paillard has recently recorded eight cases of this kind in the course of renal colic. Paroxysmal hypertension has also been observed in biliary colic, and in the gastric crises of tabes dorsalis. In pregnancy associated with albuminuria or toxaemia, eclampsia is always preceded by a sudden rise of blood pressure. If the patient survives, the blood pressure falls to normal more or less rapidly in the majority of cases. The patients should be kept under observation, however, since it is often found that ten or fifteen years afterwards there is permanent hypertension with or without albuminuria and evidence of renal disease. It is not so well known that patients who have survived eclampsia, and who exhibit symptoms of hypertension after apparent cure, remain subject to sudden crises of hypertension resembling those of chronic lead poisoning in their sudden onset and the coexistence of secondary cerebral lesions. Heitz records two such cases: (1) A woman of 47 had suffered from eclampsia in two pregnancies at the ages of 32 and 33, and after the latter there was slight intermittent albuminuria. Some fourteen years later she had two attacks of severe headache and right hemiparesis with partial aphasia. The systolic pressure varied from 160 to 180 mm. of mercury. Heitz saw her while she was taking a course of baths at Royat, and a few days later she had a sudden attack of severe headache, followed by vomiting. Her systolic blood pressure was 250 mm. and diastolic 130 mm. The urine contained only a trace of albumin. In a week her blood pressure fell to 160–110 mm., and there was no increase of the old hemiparesis. (2) A woman, aged 50, had had eclampsia in her first pregnancy at 27 years and several subsequent pregnancies with albuminuria but without eclampsia. On arrival at Royat her blood pressure was 225–130 mm. of mercury, but next day it had fallen to 160–85 mm. Eleven days later she felt fatigued and in the night was awakened by violent headache. She vomited after breakfast and the headache persisted with tinnitus and vertigo. The blood pressure was 220–120 mm. The urine, as usual, contained a trace of albumin. Five days later the blood pressure had fallen to 170–105 mm.

38. Incarcerated Retroflexion of the Gravid Uterus with Rupture of the Bladder.

T. S. KLOTS (*Nederl. Tijdschr. v. Geneesk.*, May 3rd, 1924, p. 1942), who reviews the literature, including the case reported by Flower (JOURNAL, August 2nd, 1914), records a case in a Javanese woman, aged 35, the mother of two children, who had incarceration of the uterus in the fourth month of pregnancy. The remarkable features of the case were as follows: (1) There was complete retention of urine for about five days without overflow or signs of uraemia. (2) The anterior incurvation of the tip of the coccyx was the apparent cause of the impossibility of spontaneous reduction of the retroflexed uterus. (3) The extraordinarily benign

course of the peritonitis after intraperitoneal rupture of the bladder, although the abdomen was full of infected urine for at least twelve hours. That the urine was infected was to be presumed from the fact that the bladder showed an area of gangrene. At the operation the retroflexion was reduced, the rupture of the bladder sutured, and the abdominal cavity drained. Expulsion of a macerated foetus took place the next day. The patient was discharged completely recovered three weeks after the operation. Klots attributes the high mortality from intraperitoneal rupture of the bladder to operation being performed too late.

39. The Menorrhagias of Puberty.

J. DE TORRE BLANCO (*Arch. de med., cir. y esp.*, April 12th, 1924, p. 95) states that disturbance of the menstrual function, both in rhythm and quantity, especially in the form of menorrhagia, often occurs soon after menstruation has commenced in the growing girl. The cause of the menorrhagia is, he considers, to be found in endocrine disturbance, and the situation of the endocrine lesion varies in different cases. In some patients there is a thyroid insufficiency, which responds readily to treatment by thyroidin, while in others there are symptoms of defective pituitary function or of a pluriglandular syndrome. The majority of cases, he finds, are due to ovarian disturbance, and in particular to lutein insufficiency. In such cases ergot and its derivatives are useless, and the menorrhagia should be treated by lutein opotherapy.

40. Leiomyoma of the Cervix.

D. NAPOLEAO (*Ann. Paul. de med. e cir.*, April, 1924, p. 73) states that the black race and mulattoes are more predisposed to fibroids than the white race. According to Fernando Vaz, in a maternity hospital at Rio among 746 women examined in 1915, 98 had fibroids, among 766 in 1916 there were 57 cases, and in 1917 among 865 women 39 cases, so that the average for the three years was 9.3 per cent. Fibroids of the cervix are rare. Anatomically they may be divided into submucous, interstitial, and intraligamental varieties. Clinically they may be grouped as supra- and infra-vaginal. Napoleão records an illustrative case in a white woman, aged 40, the mother of five children, who had suffered from almost daily metrorrhagia and irregular menstruation for the last four years. The case was remarkable for the large size of the tumour, which measured 12 by 15 by 22 cm., and weighed 1,420 grams, and for its spontaneous expulsion. In large fibroids spontaneous expulsion rarely takes place, and practically only when the tumour is contained in the uterus which, stimulated by its contents, enters into contractions and gives birth, as it were, to the fibroid. The expulsion of the tumour in the present case is probably to be attributed to the efforts which the patient made to expel it and to the lack of resistance offered by the flaccid pelvic floor as the result of multiparity. Histological examination showed that the growth was a submucous leiomyoma of the cervix.

Pathology.

41. Transmission of Infection in Tonsillitis.

A. L. BLOOMFIELD and A. R. FELTY (*Bull. Johns Hopkins Hosp.*, April, 1924, p. 115) have made experiments to ascertain the manner in which the streptococci associated with acute tonsillitis are transmitted from one patient to another. Cultures taken from an individual suffering from acute tonsillitis showed that the haemolytic streptococci were confined to the region of the pharynx; cultures from the lips, tongue, and buccal mucosa gave negative results, suggesting that even in the acute stage of the infection the mouth itself did not become contaminated. This was tested by smearing the growth from an agar slant of *B. coli* over the posterior part of the tongue, palate, and tonsils of a healthy subject and instructing him to talk, cough, or sneeze, while plates of 25 per cent. bile agar were held for varying periods of time at different distances in front of his mouth. The results showed that it was quite unusual for positive cultures to be obtained in these circumstances; though cultures made direct from the site of inoculation were uniformly positive, those made even from the cough spray were generally negative. In other words, bacteria which are implanted on the posterior portion of the buccal cavity are not expelled in droplets. Similar experiments were then conducted on patients with acute tonsillitis, except that no artificial inoculation was performed. Plates of blood agar were held in front of the mouth while the patient talked, sneezed, or coughed, and the number of haemolytic colonies counted after incubation. Here again it was found that it was unusual for streptococci to be expelled by these respiratory manœuvres. The question arose as to the possibility of the organisms being brought forward by hawking and expectoration. Experiments made to test this point showed that though large numbers of streptococci were found in the expectorated material, there was very little contamination of the anterior part of the mouth. It was clear, therefore, that droplet infection could play but little part in the spread of infection in tonsillitis. Even objects, such as wooden spatulae, placed in the mouth after the patient had hawked and expectorated were only occasionally and quite lightly contaminated. The conclusion was drawn that the common mode of infection in this disease is by direct contact with the patient or with freshly contaminated objects.

42. Plasma Protein Concentration in Old Age.

THE retarding effect of the blood plasma of an aged animal on the proliferation of fibroblasts is known to be due to a diminution of certain activating substances, and to a modification in the proteins which renders them more inhibitory. It is probable that the increase in the quantity of these proteins and the change in their quality react unfavourably on the tissues, which in their turn secrete a plasma of gradually altering composition. There is an intimate relationship between the activity of the tissues and the composition of the plasma which they secrete. It is justifiable to suppose that if the quantity of the proteins in the plasma were diminished —and in consequence the amount of inhibitory substances contained in it—the tissues would regain some of their lost activity, and would secrete a plasma containing a lower proportion of inhibitory substances. In this case the process of senescence would be to a certain extent reversible. To test this hypothesis A. CARREL (*C. R. Soc. de Biologie*, April 18th, 1924, p. 1005) has carried out certain experiments on old dogs, the general purpose of which was to diminish the protein content of their plasma and to maintain it in this diminished state for considerable periods of time. The dogs, aged from 8 to 14 years, were bled from the carotid artery, about 40 per cent. of the total blood being removed. The plasma was separated and replaced by an equivalent amount of Tyrode's solution, which was then injected with the blood cells into the animal again. As the proteins regenerate themselves in about twelve days, the operation had to be repeated at frequent intervals to prevent the titre of the inhibitory substances in the plasma from rising to normal. If the operation was repeated too often the plasma became too low in proteins and the animal died. The experiments with the other animals were more successful, but it was not found possible to prevent a return of the protein content to its former figure. The inhibitory action of the plasma on the growth of fibroblasts was tested, but no appreciable change occurred. The plasma of an old animal regenerates itself with the same characteristic properties that it possessed previously. It is clear, therefore, that the inhibitory substances contained are not the result of the progressive accumulation of toxic products in the circulation, but are secreted continually by the tissues. Carrel concludes that the duration of the experiments was too short to allow of an alteration in the tissues consequent on the change in their environment.

43. Shortening of the Coagulation Time of the Blood.

N. ROSENTHAL and G. BAEHR (*Arch. Int. Med.*, May, 1924, p. 535) investigated the shortening of the coagulation time of the blood after intravenous administration of sodium citrate, and conclude that it is due to the blood platelets being withdrawn from the circulation and destroyed by the spleen, or elsewhere, with a gradual liberation of their thromboplastic contents into the blood. From 3 to 6 c.cm. of a 30 per cent. solution of sodium citrate (3 to 6 grams) is the usual dose, given intravenously very slowly over a period of fifteen minutes. By shortening the coagulation time it has a marked effect in arresting secondary haemorrhage in gastric ulcer, phthisis, cerebral haemorrhage, typhoid, teeth extraction, and tonsillectomy. The increase in cytozyme and the shortening in coagulation time follow the diminution in platelets, and the maximum shortening in coagulation time occurs some time after the numbers of platelets have become normal, and lasts for hours. The characteristic shortening in coagulation time does not occur in animals (ducks) in whose blood there are only a few platelets, neither does it occur in haemorrhagic blood diseases in which there is a numerical deficiency in platelets. Consequently the intravenous administration of sodium citrate is contraindicated in purpura and haemophilia since by causing a prolongation of the coagulation time in these diseases an increased tendency to bleeding occurs. Too hasty injection is dangerous, but this can be guarded against by injecting continuously over at least fifteen minutes, using a well diluted citrate solution; its administration in from 200 to 500 c.cm. of blood in the form of the citrate transfusion of Lewisohn is the best. No tendency to intravascular thrombosis has ever been observed during repeated administrations over a period of four years.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

44. Tuberculous Meningitis simulating Epidemic Encephalitis.

M. BERNSTEIN (*Journ. Amer. Med. Assoc.*, June 14th, 1924, p. 1915) points out that in actual practice the differential diagnosis between tuberculous meningitis and epidemic (lethargic) encephalitis is frequently impossible, especially in previously healthy adults. In the report of a case of a woman, aged 22, with symptoms of multiple cranial nerve involvement, lethargy, absence of Kernig's sign, and of neck rigidity, the diagnosis was only cleared up by the finding of tubercle bacilli in a second examination of the cerebro-spinal fluid. This shows the importance of repeated examinations for tubercle bacilli in patients with symptoms of epidemic encephalitis. A comparison of the symptoms of the two diseases brings out the close clinical similarity which may arise and, as in the case reported, the value of frequent examinations of the cerebro-spinal fluid for tubercle bacilli by smears and animal inoculation as the only means to a correct diagnosis. Both infections may occur at any age, although tuberculous meningitis is more usual in childhood; in both the onset may be insidious with gradually increasing lethargy, ocular palsies, Kernig's sign, and rigidity of the neck muscles. The reflexes are variable in both. In tuberculous meningitis the cerebro-spinal fluid is usually under pressure, clear or turbid, showing a pleocytosis with large proportion of lymphocytes. In epidemic encephalitis it is usually clear and under normal or slightly increased pressure, with a pleocytosis in about two-thirds of the cases.

45. Specialized Subendocardial Muscle Fibres.

D. PACE (*Arch. des Mal. du Cœur, des Vaisseaux et du Sang*, April, 1924, p. 193) states that, prior to the discoveries of Tawara, Stanley Kent, and His, Paladino (1876) described certain bundles of cardiac muscle fibres which run from the auricles to the ventricles, to the auriculo-ventricular valves, and to the papillary muscles. They are quite distinct from the bundle of His, in structure and function, although some of them are contiguous with it. Kent described two kinds of muscular bundles: (1) perivalvular conducting fibres, and (2) communicating fibres (auriculo-ventricular), which he regarded as establishing continuity between the musculature of auricle and ventricle. Pace denies that these "communicating fibres" exist, but he has traced strands of striped heart-muscle fibres from the auricles to the venae cavae and the pulmonary veins; these do not convey impulses to the auricles, as there is no trace of nodal tissue; this is found only in the sinus node (Keith and Flack) and in Tawara's node—"these are the true automatic centres of the heart." Pace states that a stimulus arises in the sinus node, travels rapidly to the two auricles, "certainly to the right auricle slightly more quickly than to the left." Then directly, without following any particular route, it reaches the node of Tawara; thence the stimulus rapidly traverses the bundle of His and its branches; the right branch is shorter than the left, and consequently the right ventricle contracts more quickly.

46. Diet and Growth.

G. MOURIQUAND, P. MICHEL, and L. BARRE (*Journ. Méd. de Lyon*, February 20th, 1924, p. 95) review the present state of knowledge of the nutritional factors of growth as follows: An adequate diet for a growing child must provide (*a*) a sufficient number of calories; (*b*) the three categories of foodstuffs—protein, fat, and carbohydrate; (*c*) certain amino-acids which are indispensable for the formation of new tissues ("aliments plastiques"); (*d*) accessory food factors—that is, vitamins and mineral salts. The number of calories required per kilo of body weight is highest in infancy and gradually decreases with age. For a breast-fed child the number is put at 90, for one artificially fed at 100. When the age of 2 years is reached the number of calories required for health has gone down to 67 per kilo body weight; by the age of 5 it is reduced to 62; at 10 it is 54; at 14, 48; and in the adult it is about 37. A certain balance must be maintained between the quantities of protein, fat, and carbohydrate, each element being necessary to the most advantageous employment of the other two by the body. The proteins furnish material for the formation of new tissue, but are not all of equal value. The amino-acid groups, lysin, tryptophane, cystine, arginine, histidine, are all necessary for sustenance and growth, and a protein like gelatin, which does not contain these groups in its molecule, cannot further growth, and can only be utilized by the body when these groups are provided by other proteins. The proteins of milk contain all the necessary amino-acid groups.

47. Fragilitas Ossium Congenita.

CASTELLI (*La Pediatria*, March 15th, 1924, p. 351) records a case of fragilitas ossium congenita. When first seen, a few days after birth, the child was found to have fracture of the right and left humerus, of the left femur, and of the left tibia and fibula. *X*-ray examination was not undertaken till the baby was 3 months old; seventeen fractures in all were then revealed—one in each of the right third, fourth, and fifth ribs, one in the left humerus, and two in the right, one in each radius and in each ulna, four in the femurs, one in each tibia, and one in the left fibula. The characteristic blue colour of the sclerotics was present, but no other abnormalities were found. The mother was a primipara and seemed normal, and there had been nothing unusual about the gestation. No mention is made of the father.

48. Complications of Insulin Treatment.

K. FABER (*Ugeskrift for Laeger*, March 27th, 1924, p. 265) has observed several cases of sepsis following injections of insulin, although the greatest care was taken to give them under aseptic conditions. In one case, in which a benign mitral stenosis had existed for a long time, acute sepsis following an injection of insulin was associated with ulcerative endocarditis, which proved fatal. In two other cases one abscess after another developed, but the infection was ultimately arrested. In addition to these hospital cases there were others in which abscesses developed when the treatment was continued at home after discharge from hospital. In the case of a patient who had been treated for four months in hospital without abscesses developing, eight abscesses formed after discharge. Another patient was admitted to hospital with a severe phlegmonous gangrene in the region of the hip, which had developed as a sequel to the injections. The author notes that there is considerable reticence with regard to such cases, and he advocates greater publicity. Probably the frequency of insulin abscesses is dwindling; some time ago comparatively "raw" insulin was injected in the hope that its action would be more prolonged than that of purer preparations. Another complication to which the author refers is pulmonary oedema, a case of which he has observed. It is due to retention of water occurring early in insulin treatment which has suddenly counteracted severe acidosis. Reference is also made to the well known symptoms of hypoglycaemia following insulin treatment.

49. Enuresis and Spina Bifida.

A. J. A. ARNESEN (*Norsk Mag. f. Laegevidenskäben*, April, 1924, p. 299) has carried out *x*-ray examinations of most of the children admitted to his hospital during 1922 and the first half of 1923. A few adults were also examined in the same way, and altogether skiagrams of 63 persons were available for a study of the connexion between enuresis and spina bifida. Of the 63 persons 28 suffered from enuresis (nocturnal, diurnal, or both) and 35 did not. Of the 28 persons suffering from enuresis 15 showed signs of spina bifida and 13 did not; of the 35 persons not suffering from enuresis only 7 showed signs of spina bifida and 28 did not. Hence the author's conclusion that there is a definite connexion between enuresis and spina bifida. He records in detail a case of enuresis and spina bifida in a male, aged 21, on whom laminectomy of the first sacral vertebra was performed with success, the enuresis, which had been refractory to conservative treatment, not recurring during an observation period of three months after the operation.

50. Oxaluria simulating Renal Colic.

E. BERNHEIM (*Deut. med. Woch.*, April 11th, 1924, p. 462) gives an account of three cases simulating renal colic due to calculi. Two were men, and the ages of the three were 23, 22, and 50. In each case there was a history of bouts of pain referred to one side or other of the abdomen and described in one case as excruciatingly severe, the patient requiring an injection of morphine. On the same side as the pain there was unilateral tenderness in the kidney or ureter region. The urine contained no sugar or albumin, but in the sediment there were a few leucocytes, epithelial cells, red blood cells, and much calcium oxalate. Functional tests of the kidneys, cystoscopic examinations, and skiagrams failed to show any sign of renal disease or of calculi in the urinary tract. Treatment directed

to the oxaluria was completely and permanently successful, no recurrence of the symptoms being observed during an observation period, in the most recent case, of a year and a half. The author notes that all three patients showed signs of neuropathy, and he suggests that there is a connexion between a neuropathic and an oxalate diathesis. It may be that the excretion of oxalates by robust persons gives rise to no symptoms, whereas the neuropathic experiences sensations very difficult to distinguish from those of a calculus in the urinary tract.

Surgery.

51. Late Recurrence of Appendicitis.

K. KOCH (*Zentralbl. f. Chir.*, March 1st, 1924, p. 340) records a case, in a man aged 22, who had been operated on for suppurative appendicitis at the age of 5. The treatment at that time consisted merely in opening the abscess, as radical operation was too difficult and subsequent appendicectomy was refused by the parents. The wound did not close until after six months' suppuration, but during the next seventeen years the patient remained free from any abdominal symptoms. He was then suddenly attacked by retching and abdominal pain. He was admitted to hospital four days later with the diagnosis of appendicitis, and an operation was at once performed. On opening the peritoneum an encapsulated abscess on the outer side of the caecum was found from which pus with a faeculent odour was evacuated. The stump of the appendix, measuring 2 cm. in length and 1 cm. in thickness, was then discovered bound down by adhesions with a minute perforation at its gangrenous tip, and a faecal concretion, the size of a pea, at its coccal end. The appendix was removed with some difficulty and complete recovery took place. Koch has found two similar cases recorded by Bode in which the patients died of diffuse peritonitis originating from an appendix stump about ten years after evacuation of an appendix abscess. Like Koch's patient, both had been free from abdominal symptoms in the interval between the two attacks. The late occurrence of the relapse in Koch's case was probably due to the presence of the faecal concretion. In a postscript, Koch alludes to a paper by Reschke, who records 37 cases of appendicular abscess, of which no fewer than 16, or 43 per cent., had a recurrence. Twelve of these occurred in the first, two in the second, and one each in the fourth and fifth years after the operation, which had always consisted in a simple evacuation of the abscess. In only one case had the whole appendix been destroyed by the abscess.

52. Carrel-Dakin Irrigation for Acute Osteomyelitis.

E. HEDLUND (*Acta Chir. Scand.*, May 7th, 1924, p. 513) finds that the usual treatment of acute osteomyelitis of the long bones consists in opening the bone, plugging its cavity, and removing necrotic bone later by sequestrotomy. The disadvantages of this procedure are the pain, the delay entailed by the necrosis of the bone, and the necessity for a second operation. Since 1917 the author has treated twenty-one cases by irrigation with Dakin's solution, on the lines laid down by Carrel. A comparison of the length of stay in hospital between cases treated (1) with Dakin's solution, and (2) without it, showed that it was on the average only 101 days for the first class, as compared with 261 days for the second class. After opening the bone freely and removing all the diseased tissue, the author introduces several Carrel tubes for thorough irrigation. Drainage is provided for abscesses in the soft tissues, and care is taken to arrest haemorrhage. On the eleventh or twelfth day the irrigation with Dakin's solution is discontinued and the drains are removed. This procedure shortens the treatment, renders it practically painless, and usually prevents necrosis of bone. A further advantage is that the scar formed is comparatively narrow and loose. The author insists that the hypochlorite must be of the desired strength; one of his failures was traced to the fact that the ready-made solution used contained only 0.07 per cent. of hypochlorite instead of the 0.475 per cent.

53. Acute Appendicitis in Children.

G. P. MULLER and I. S. RAVDIN (*Journ. Amer. Med. Assoc.*, June 7th, 1924, p. 1852), from an operative experience in 58 consecutive cases of acute appendicitis in children, conclude that operation is indicated in every case regardless of the stage of the disease or of the condition of the patient. Prognosis is similar to that in adults and is always good, provided that the case is diagnosed early before inflammation has spread to contiguous structures. Expectant treatment is wrong, since acidosis from starvation occurs early and is intensified by sepsis, while the resistance of the peritoneum is less and the danger of metastatic infection greater. Diagnosis is often complicated by the fact that the classical symptoms of tenderness, vomiting, involuntary rigidity, and fever frequently occur in children who are not suffering from appendicitis; but these signs, together with a marked leucocytosis, and the results of rectal examination, are important in differentiating between diseases that may simulate it—for example, pneumonia, pyelitis, Pott's disease, gastro-enteritis, faecal impaction, and intestinal obstruction. While in infants severe appendicitis may be unaccompanied by any of the classical symptoms, in older children the inflammatory reaction may be more severe than in the adult. Pending diagnosis purgation must be avoided and the bowels opened, if necessary, by enemata; a total leucocyte count is most important in establishing a diagnosis, since this is almost invariably high. Operation through a muscle-splitting incision is advised as affording easy access without exposing large areas of the small intestine, and in many of the cases the abdominal wall was not sutured, thorough drainage being preferable to insufficient drainage through a partially closed incision. A resulting hernia is rare.

54. Epigastric Hernia.

H. WILLEMSE (*Nederl. Tijdschr. v. Geneesk.*, April 26th, 1924, p. 1863) states that in 10,000 cases of hernia of all kinds there are 137 cases of epigastric hernia, 120 of which occur in men and 17 in women. The majority are found in men between the ages of 30 and 45 who are engaged in hard physical labour. Of twenty-five patients operated on by Willemse only one was a female; three were below 20, nine were between 20 and 30, eight between 30 and 40, and four between 50 and 60. Three were employed in work above ground and all the rest below, so that the majority were engaged in very hard physical labour. There was no history of direct trauma or of loss of flesh. The complaint made by all the patients was pain in the stomach, but in only one case was this localized in the site of the hernia; in all the others it was situated one or two fingerbreadths below the xiphoid process—that is, at a higher level than the hernia. The duration of the symptoms ranged from fourteen days to years. At first the pain did not radiate to the back, while pressure on the pyloric region did not cause any pain radiating to the mid-line as in pyloric ulcer. Diet did not appear to have any influence on the pain. In most cases there was gastric hypoacidity. In twenty-two of the twenty-five cases the pain in the stomach returned very quickly after the operation, in most within six weeks, so that Willemse came to the conclusion that there was no connexion between the gastric pain and the hernia. Spontaneous pain at the site of the epigastric hernia itself appeared to be the only symptom peculiar to the condition.

Radiology and Electrology.

55. Lipiodol in Urethral Radiography.

SICARD and FORESTIER (*Bull. et Mém. Soc. Méd. des Hôpitaux de Paris*, February 28th, 1924, p. 207) refer to the great utility of this oily solution of iodine, which is quite fluid, non-irritating, and opaque to *x* rays. Injected into various cavities or canals, it furnishes valuable information in regard to their size, shape, and any anatomical abnormalities. Sicard and Forestier refer to its usefulness in examination of epidural and subarachnoid cavities, as well as in skiagraphy of the bronchial tubes. They have also utilized it in urethral skiagraphy, as it is non-irritant, whereas 10 per cent. solutions of collargol, although opaque to *x* rays, are very irritating to the urethral mucosa. The technique is quite simple: The patient having completely emptied the bladder, the conical nozzle of a glass syringe of 10 to 20 c.cm. capacity is inserted into the meatus and the orifice is compressed upon the nozzle. After slowly injecting a few cubic centimetres a sensation of resistance is felt: this indicates that the anterior urethra has been fully distended. Then, while pressure is maintained in order to overcome the contraction of the sphincter, a skiagram is taken. Pressure being maintained, a further quantity of 4 to 6 c.cm. of lipiodol is injected, and on taking a second skiagram, an image of the entire urethra, the meatus, and the neck of the bladder is obtained. If necessary, a further quantity (4 to 6 c.cm.) may be injected into the bladder prior to taking another skiagram. Results show that, when distended, the urethra has a diameter of more than 15 mm. Contrary to anatomical measurements obtained when the urethra is empty, the membranous portion appears to have the largest diameter. The normal urethra from meatus to prostate, when fully distended, shows a very smooth and regular contour. On the other hand, from the prostate to the neck of the bladder, the urethra appears as a flattened canal. In cases of prostatic hypertrophy the prostatic urethra is characteristically elongated and distorted: in stricture this appearance is still more instructive; in recent cases the canal is sinuous and dilated, but in more chronic cases the general calibre is greatly reduced and the contour very irregular.

56. Lipiodol in Spinal Radiography.

A. RADOVICI, S. DRAGANESCO, and A. GEORGESCO (*Bull. et Mém. Soc. Méd. des Hôpitaux de Bucarest*, February, 1924, p. 27) observe that the discussions at the Neurological Congress in Paris in June, 1923, only confirmed once more the difficulty of making an accurate diagnosis of compression of the spinal cord. Numerous clinical observations have not resulted in a classification of pathognomonic signs of compression. While examination of the cerebro-spinal fluid before and after the onset of paraplegia often gives valuable information, radiography of the compressing tumour is seldom useful, unless there is a bony lesion or a psammoma. Hence the importance of Sicard and Forestier's method of epidural or subarachnoid injection of lipiodol—a solution of iodine in a vegetable oil, which is opaque to *x* rays, and, being heavier than water, falls to the bottom of the dural sac unless arrested by some obstacle—for example, tumour, cyst, Pott's disease, pachymeningitis, etc. A few minutes after injection of a drop of lipiodol in the atlanto-occipital or cervical region it may be seen at the level of the first sacral vertebra or the limit of the dural sac, unless arrested at some point, which coincides generally with the upper limit of the compression. The authors give details of ten cases in which this technique has been employed in Marinesco's clinic. They conclude that Sicard's method of intra-arachnoid injection of lipiodol is quite harmless; in one case only (syphilitic myelitis) the injection was followed by pains in the legs, persisting for a few days. In four of their ten cases of paraplegia subsequent radiography confirmed the clinical diagnosis of compression of the cord, while in three cases they were able to exclude the existence of subarachnoid obstruction which had been diagnosed clinically; in one of these cases an exploratory laminectomy failed to reveal any tumour. In their three last cases lipiodol confirmed the clinical diagnosis of myelitis without compression of the cord.

57. X-Ray Treatment in Exophthalmic Goitre.

G. M. GOODWIN and W. B. LONG (*Amer. Journ. Med. Sci.*, January, 1924, p. 38) refer to the differences of opinion as to the etiology and treatment of this disease. The risks and uncertainty of operative measures encourage many patients to submit readily to *x*-ray treatment. The authors give details of nine patients whom they have treated, all of whom were of the toxic exophthalmic type with the usual symptoms. They received a weekly treatment of approximately two-fifths of an erythema dose filtered through aluminium and directed to alternate sides of the neck each week between the upper level of the thyroid and the third rib (in order to include the thymus). A uniform distance of 35 cm. from the target to the skin was maintained, the aluminium filter was 3 mm. thick, the potential was 140,000 volts, and 5 milliampères of current were used for five minutes. Such a dose given weekly on alternate sides of the neck may be continued for months without danger of dermatitis, but after six or eight such treatments faint tanning is seen. Definite improvement usually commences after five months. The most striking feature is the gain in weight: in the first five cases one gained 42 lb., one 27 lb., and all the others 15 lb. or more. The pulse rate showed a fall, but was more variable than the other curves. There was a striking improvement in the appearance of the patients, save for the prominence of the eyes. In Case vi there was marked subjective improvement but little visible change. The patient in Case vii received twenty-two treatments (a larger number than usual), with no improvement. She lost 14 lb., became discouraged, and asked for operation; a subtotal resection was done; the gland was adherent to adjacent structures, but no particular difficulty resulted from this. In Case viii there were thirty-four treatments, with temporary improvement but subsequent relapse. In Case ix improvement resulted, but the treatment had to be interrupted. The authors conclude that in 5 cases the result has been satisfactory, in 1 case the result is doubtful, and in another treatment was interrupted. In the 2 remaining cases the toxaemia seemed to increase in spite of prolonged treatment. Full summaries and charts are appended.

58. Gonorrhoeal Arthritis treated by Radium.

A. COYON and J. GAGEY (*Bull. Soc. de Thér.*, March 12th, 1924, p. 85), who record five illustrative cases, state that though radium is not a panacea, in some cases of gonorrhoeal arthritis its application may produce very rapid improvement and almost instantaneous disappearance of pain, so that a complete cure can be effected in a relatively short time through early mobilization of the joint. The action of the radium is most marked in early cases. When once fibrous ankylosis has occurred the treatment is no longer efficacious. The authors suggest that the action of the radium is to be explained by the infiltration of embryonic cells which has been observed in cases of keloid treated by radium.

Obstetrics and Gynaecology.

59. Adenomyoma of the Recto-vaginal Septum.

M. T. GOLDSTINE and S. J. FOGELSON (*Surg., Gynecol. and Obstet.*, June, 1924, p. 753) describe four cases of adenomyoma of the recto-vaginal septum. The first patient, a married woman aged 31, complained of severe pain and menorrhagia: the uterus and adnexa were normal, but after division of the peritoneum a cystic tumour containing fluid similar to that of ovarian chocolate cysts was enucleated from the recto-vaginal septum. The epithelial lining of the cyst was like that of the uterus near the internal os. The chief complaint of the second patient, aged 27, was dyspareunia: one ovary contained an endometrial chocolate cyst, and sections taken from the recto-vaginal septum contained scar tissue and glands composed of a single layer of columnar epithelium. In the third case the pelvic findings were negative save for the septal adenomyoma, and serial sections of the uterus failed to reveal adenomatous tissue. The fourth patient, a nullipara aged 51, complained of recurrent attacks of abdominal pain and vomiting. At operation numerous signs of chronic pelvic peritonitis were found; endometrial cells and granulation tissue were demonstrated in islets of tissue removed from the ileum. From a study of these and other cases the authors discuss the etiology of endometrial cysts, and conclude that the balance of evidence favours the view that they are of inflammatory origin, as maintained by R. Meyer and von Franqué. In the first case described above the demonstration of mast and plasma cells in the tumour is taken as supporting this view, notwithstanding the fact that the presence of tissue in situations where it is not normally found may cause an aseptic inflammatory reaction.

60. The Pregnancy Reaction of Frank and Nothmann.

A. FOYER (*Nederl. Tijdschr. v. Geneesk.*, May 17th, 1924, p. 2225) states that Frank and Nothmann in 1920 (*Muench. med. Woch.*, No. 50) found that administration of 100 g. of glucose by mouth on an empty stomach in the first three months of pregnancy produced glycosuria, while the blood sugar content during the excretion of the sugar did not rise above 1 per mille. The sign was not present in non-pregnant women. Nürnberger (*Deut. med. Woch.*, 1922, No. 1), who repeated the test in 70 women, confirmed these results. He found that 18 women in the first three months of pregnancy all gave a positive reaction, and emphasized the value of the test in extrauterine pregnancy, as a positive reaction in doubtful cases made early operation possible. Foyer tested the reaction in 155 women, and obtained positive results in 10 out of 18 in the first three weeks of pregnancy, in 56 out of 60 in the first three months of pregnancy later than the first three weeks, and in 12 out of 32 who had been pregnant for more than three months. In 43 non-pregnant women the test was negative, and in two it failed because the glucose was vomited. Foyer concludes that the occurrence of glycosuria with a blood sugar content below 1.9 per mille after administration of 100 grams of glucose is an almost certain sign of a pregnancy which is of longer duration than three weeks and less than three months. On the other hand, a negative result—that is, the absence of glycosuria or the presence of glucose with a blood sugar content above 2 per mille—does not exclude pregnancy (in 8 per cent. of cases).

61. Conservative Treatment of Eclampsia.

A. C. BECK (*Amer. Journ. of Obstet. and Gynecol.*, June, 1924, p. 677) states that up to six years ago the first consideration in treating eclampsia at the Long Island College Hospital was immediate delivery: the results were so unfavourable in comparison with those reported by Tweedy, Stroganoff, and others, that conservative treatment has since been tried, with striking improvement in the mortality. An early and large phebotomy—as a rule 1 litre, immediately after the first convulsion occurring in hospital—is the most important measure; gastric lavage has been abandoned, and colonic irrigation reduced to once in twenty-four hours, for it is believed that these procedures are apt to induce convulsions. Morphine is the only sedative drug used—half a grain being given on admission, and a quarter of a grain at hourly intervals until the convulsions cease or the respiration frequency is markedly lowered. Much importance is attached to keeping the patient protected from sensory stimuli in a quiet darkened room. As a rule eclamptics go into labour spontaneously during treatment or shortly after recovery; but if after waiting for several days labour does not commence the author believes that it is right to induce it, in order to avoid a second attack of eclampsia. In pre-eclamptic toxaemia he advocates induction of labour if no improvement follows the use of eliminative measures.

62. Pregnancy and Toxaemia.

E. E. BUNZEL (*Amer. Journ. of Obstet. and Gynecol.*, June, 1924, p. 686) publishes statistics relating to the incidence, character, and prognosis of pregnancy with toxaemia, defined briefly as a complication of pregnancy manifested by headache, disturbances of vision, oedema, hypertension, and albuminuria, either with or without convulsions. The cases considered number 465, being 6.3 per cent. of hospital deliveries; and 65 per cent. were admitted from the antepartum clinic or from private practice. They are classified as—(1) mild, with systolic blood pressure less than 145 mm., slight oedema, and albuminuria not greater than 10 per cent.; (2) moderately severe, with blood pressure from 145 to 165 mm., pitting oedema, and albuminuria of 10 to 20 per cent.; (3) severe, with over 165 mm., massive oedema, and albuminuria over 20 per cent.; and (4) convulsive. The four divisions made up respectively 23, 35, 31, and 11 per cent. Experience is increasingly in favour of conservative treatment in all the groups, and operative induction of labour after the fifth month was performed because of toxaemia in only 14 per cent. In the 54 convulsive cases the maternal mortality was 11 per cent. and foetal mortality 51 per cent.; there were no maternal deaths in the 16 cases of post-partum convulsions. In the entire series the maternal mortality was 3 per cent., and 72 per cent. of the babies born left the hospital in good health. An examination of 133 of the mothers was made from ten to twenty-two months after labour; of these, 37.6 per cent. had a systolic blood pressure of 140 mm. or more, and 39.8 had albuminuria. Ninety-two of these patients showed distinct impairment of renal function as tested by phenolphthalein injections; and of those who while in hospital had had papillary oedema, retinitis, or haemorrhage into the fundus oculi, 31 per cent. showed persistence of morbid retinal conditions when examined in the "follow-up clinic." No fewer than 41.4 per cent. of patients thus re-examined are described as showing signs of "cardio-vascular renal disturbance."

Pathology.

63. The Virus of Encephalitis and that of Herpes.

G. AURIAT and P.-E. FLYE SAINTE MARIE (*C. R. Soc. de Biologie*, June 13th, 1924, p. 46) contribute some experimental work towards solution of the problem of the identity of the virus in both herpes and epidemic encephalitis. The cerebro-spinal fluid of a patient with Parkinsonian symptoms, who had suffered from encephalitis three years previously, was inoculated on to the scarified cornea of a rabbit. The animal remained well, and was killed after four months. *Post mortem*, it was found to have a slight meningeal reaction, diffuse lymphocytic infiltration beneath the ependyma of the lateral ventricles, oedema around the vessels, and nodular masses of lymphocytes in the neighbourhood of the ventricles. A second rabbit inoculated from the first, killed in perfect health after two months, showed perivascular oedema and an abundant lymphocytic infiltration beneath the ependyma. In a rabbit inoculated from a case of labial herpes, keratitis developed after two days, and the animal was killed after three weeks. Diffuse inflammatory lesions were found beneath the ependyma of the ventricles, including masses of lymphocytes and general perivascular oedema. In a rabbit inoculated from a case of facial herpes, kerato-conjunctivitis developed on the following day, with convulsions, and death on the seventh day. At the necropsy there was found congestion and lymphocytic infiltration of the meninges, infiltration beneath the ependyma of the ventricles, and in the white matter perivascular cuffs of lymphocytes. From these experiments they conclude that the cerebro-spinal fluid of patients suffering from chronic encephalitis may remain virulent, even though its virulence may be attenuated, that both the viruses of herpes and of encephalitis may give rise to chronic lesions of the brain without the appearance of any clinical symptoms of disease, and that if these two viruses are different there is no way of distinguishing between them by inoculation of rabbits.

64. Physiological Leucocytosis in Man.

A. KOBRYNER (*C. R. Soc. de Biologie*, June 6th, 1924, p. 1475) has made a total of 722 observations on himself and others with a view to determining the degree of physiological leucocytosis. The capillary blood was examined in individuals subjected to all kinds of dieting, such as total fasting, fasting with ingestion of fluids, carbohydrate and fat dieting, mixed dieting, excess of proteins, and dieting exclusively with extractives. Moreover, the subjects under observation were examined in different postures, and when their mode of life had been altered in various ways. His results lead him to conclude that the adult man presents a leucocytic curve which is composed of large waves, in their turn made up of smaller undulations. This curve is independent of all the dietetic, postural, and other features mentioned above. Ingestion and digestion of food have no influence on this curve or on any of its phases. There is no such thing as alimentary hyperleucocytosis or hypoleucocytosis; the particular count that is recorded depends entirely on the moment chosen; if this happens to be during the rise of the curve, then a hyperleucocytosis will be recorded; if, on the other hand, it happens to be during the decline, then a leukopenia will be found. It is therefore clear, according to the author, that the method of estimating hepatic insufficiency by the enumeration of leucocytes during the so-called haemoclasic crisis is quite untrustworthy.

65. A New Method for the Prevention of Bovine Tuberculosis.

A. CALMETTE and C. GUÉRIN (*Ann. de l'Inst. Pasteur*, May, 1924, p. 371) record interesting results obtained in the vaccination of heifers against tuberculosis. The organism used was a bovine strain, which, after being grown on glycerin bile potato medium for thirteen years, had become completely avirulent to all species of animals. When injected subcutaneously in doses of 50 to 100 mg. into the dewlap of a heifer, it gave rise to a non-suppurating local lesion which persisted for ten to eighteen months. The animal was no worse for the injection. Tested by tuberculin it was found to give a positive reaction, which disappeared, however, in six months to a year. Having ascertained the harmlessness of injecting these bacilli in the living state, they arranged an experiment in which 20 heifers, aged 7 to 8 months, were taken and divided into two groups. In the first group were placed 12 animals; 6 of these received a subcutaneous injection of 50 mg., and 6 a subcutaneous injection of 100 mg. of living avirulent bacilli. The second group of 8 animals served as controls. In the case of the vaccinated animals there was a local reaction at the site of injection similar to that described above; a general reaction occurred in three animals with a five days' bout of fever starting on the fifteenth to the eighteenth day. All reacted positively to tuberculin. At varying periods after injection—namely, 1, 3, 6, 12, 15, and 18 months—two of the animals, together with one unvaccinated control, were given an intravenous injection of 5 mg. of virulent bovine bacilli. All of the control animals died within two months. Of the vaccinated animals, which were killed for examination at periods varying from two to eleven months after the injection of virulent bacilli—including one which died of strongyloid infection of the bronchi—all except one were found to be absolutely free from tuberculosis. The exception was one of the animals which was tested eighteen months after vaccination; it was found to have a sclerotic lesion in both lungs, without any definite tuberculous nodules. From these experiments it appears that animals vaccinated with an avirulent strain of tubercle bacilli acquire an immunity to tuberculosis which persists for at any rate fifteen months. They are able to withstand an intravenous dose of virulent bacilli, fatal to control animals in fifty days, without apparently suffering any ill effects. The authors consider that for practical purposes it would be best to revaccinate the animals every year. They are now revaccinating herds of normal cattle which have been placed at their disposal.

66. Living Defatted Tubercle Bacilli.

R. ARIMA, K. AOYAMA, and J. OHNAWA (*Deut. med. Woch.*, May 23rd, 1924, p. 666) have investigated since 1916 the possibilities of converting tubercle bacilli into comparatively avirulent germs by robbing them of their fats and lipoids. This they succeeded in doing by growing ordinary tubercle bacilli on saponin-containing media to which a lipase had been added. The bacilli thus cultivated were found to be no longer acid and alcohol-fast, but when they were again cultivated on glycerin agar they resumed the properties of ordinary tubercle bacilli. Among fifty different strains the authors found seven which on cultivation could be easily robbed of their acid and alcohol-fast properties. Inoculation tests were carried out on 101 rabbits and 79 guinea-pigs. The saponin cultures proved to be much less virulent than the ordinary glycerin agar cultures of tubercle bacilli, and it was found that when the experimental animals were given a preliminary injection of the saponin cultures they were much more resistant to cultures of virulent tubercle bacilli, injected some time later, than were the control animals. The authors call their emulsion of saponin-cultured bacilli "AO," and though they consider its sphere of usefulness to be greatest in the prophylaxis of tuberculosis they have found "AO" beneficial also in early and latent forms of the disease. They do not give details as to dosage, and they speak only in general terms of the combined harmlessness and efficacy of their remedy.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

67. A New Method of Estimating Capillary Pressure.

A. C. GUILLAUME (*C. R. Soc. de Biologie*, June 20th, 1924, p. 75) gives a method of estimating capillary pressure entirely different from any hitherto in use. It depends on the observation that the living skin presents, on spectroscopic examination by direct vision, at least one and often two absorption bands of oxyhaemoglobin, and these are seen with marked distinctness, only disappearing when the majority of the capillaries have been emptied by pressure. Previously the author had employed a direct observation of the capillaries on the back of the finger by means of a capillaroscope as a criterion of the pressure. The application of his more recent method is effected by interposing a specially constructed spectroscope in the eyepiece of the capillaroscope, to which is also attached a pressure gauge with scales and weights. The weight at which the bands in the spectrum disappear forms the basis of the estimation.

68. Achylia in Childhood.

E. KLEMMENTSSON (*Acta Paediatrica*, vol. 3, fasc. 2, 1924, p. 136) has investigated the composition of the gastric juice of 166 children between the ages of 1 and 12 years. They were classified in four groups. In the first group, which included 111 children, there were no symptoms referable to the digestive system; most of them were convalescent from various diseases. In 6 of these cases achylia was found, and only in one of these cases was there a history of previous illness which might possibly have injured the lining of the stomach by direct or haematogenous infection. In the second group, which included 12 children, there was a recent history of acute intestinal disease. In this group there was little or no departure from the normal in the composition of the gastric juice. In the third group, which included 30 children, there were signs of chronic gastro-intestinal disease. In every case the secretion of gastric juice was very defective, absolute achylia being found in 26 cases, and hypochylia in the remaining 4. It was observed in some of these cases that with an improvement in the general condition the composition of the gastric juice approached the normal. In the fourth group, which included 13 children, there were no definite symptoms of gastro-intestinal disease, but there were complaints of epigastric pain before or after meals. In none of these cases did test meals show any great deviation from the normal in the composition of the gastric juice. The author found, as a rule, in healthy children under the age of 12 years, that the secretion of hydrochloric acid by the stomach is considerably below the normal for adults; this secretion is lowest at the age of 1 year, after which it increases rapidly till the fourth to the seventh years. After the seventh year it remains fairly constant for the rest of childhood.

69. Tetany and Alkalosis.

O. TEZNER (*Monats. f. Kinderheilk.*, May, 1924, p. 97) gives a critical review of the evidence in support of the theory that tetany is caused by excessive alkalinity of the blood, and reports some experiments designed to test it. If the symptoms were produced by alkalosis, they would be relieved by the injection of acid into the blood. Tezner produced electrical and mechanical hyperexcitability of the nerves in two dogs by causing them to breathe excessively under light ether anaesthesia; he then injected 60 c.cm. of N/4 hydrochloric acid: he found that the hyperexcitability was abolished and that the urine became more acid. To exclude a deficiency of carbon dioxide in the blood as the cause of the symptoms, he gave three other dogs pure carbon dioxide from a bag, tested the electrical excitability of their nerves, and then injected 200 c.cm. of sodium bicarbonate solution intravenously. He found that the inspiration of carbon dioxide (and consequent acidosis) caused a lowering of the nervous excitability, and that the injection of alkali quickly raised it much above normal, and at the same time made the urine alkaline (showing that an alkalosis had been produced). He concludes (1) that the tetany of hyperpnoea depends on an excessively alkaline reaction of the blood, and (2) that symptoms of tetany may be caused in the dog by excess of alkali. He then proceeded to try the effect of alkalosis on the electrical excitability of the nerves (*a*) in normal children, and (*b*) in a child with latent idiopathic tetany. No change was produced, although enough alkali was given to render the urine strongly alkaline. Reviewing the findings of other investigators in gastric tetany, in tetania parathyropriva, and in guanidine tetany, he concludes that the evidence of alkalosis is very doubtful and that in none of these varieties has it been shown that alkalosis causes the symptoms. Finally, he tried treating idiopathic tetany with drugs which decrease the alkalinity of the blood (calcium chloride and ammonium chloride). He had no success with ammonium chloride; he thinks calcium chloride better, but is inclined to attribute its good effect to the calcium and not to the acidifying effect of the Cl radicle. He concludes that there is no evidence that alkalosis is more than a very subsidiary factor in any variety of tetany, except that produced by hyperpnoea.

70. Treatment of Graves's Disease with Insulin.

J. GOFFIN (*Le Scalpel*, April 19th, 1924, p. 498) admits the difficulty in determining the value of treatment in Graves's disease, and points out the desirability of basing an opinion on a large number of cases, followed for a long period. As a preliminary communication only, he records briefly four cases treated by insulin, with rapid improvement in three. In the first case, after the failure of other lines of treatment, the author tried insulin injections. Improvement rapidly followed; the palpitation diminished, the thyroid decreased in size, exophthalmos disappeared, the tremor became less, and subjective symptoms ceased. In the second case, the subjective symptoms greatly diminished, the tremor almost ceased, von Graefe's symptom disappeared, and the goitre and palpitation became less noticeable. In the third case, the subjective symptoms disappeared or diminished, the tremor ceased, and the goitre of the neck decreased. In the fourth case, in which syphilis also was present, only slight improvement followed. The author considers that insulin influences the general condition, and may also have some action on the sympathetic or on the endocrine glands.

71. Bronchial Asthma and Climate.

W. STORM VAN LEEUWEN, H. VAREKAMP, and L. BIEN (*Klin. Woch.*, March 25th, 1924, p. 520) refer to the well known fact that bronchial asthma occurs in certain cases when the patient has inhaled substances which are harmless to normal individuals—for example, pollens, ipecacuanha, castor oil, or effluvia from horses or other animals. They believe that there are other unknown colloid substances which may produce asthma in "sensitized" patients, and they find that the removal of such patients to a mountainous country has an immediately beneficial result in many cases. Other factors beside altitude have to be considered, including air pressure, humidity, temperature, and amount of sunlight. In Holland there are three principal zones: (1) the dunes and sea-coast; (2) the banks of the larger rivers; (3) the drier sandy areas. If patients from the coast are sent to the third zone they improve, while those from the second zone do not. The authors determined to send three patients to various Swiss mountain stations, and observations were made at Basle (100 metres) and at various mountain stations, the highest being St. Moritz (1,800 metres). The three patients were natives of the different climatic zones. Each was carefully examined daily (auscultation and blood pressure). The third patient (from Groningen) did not improve as rapidly as the others, but eventually, when at St. Moritz, all were free from symptoms of asthma and of bronchitis. The authors conclude that (1) the majority of cases are due to inhalation of certain "asthmogenous" substances of usually unknown nature; (2) these unknown substances are seldom found in mountain stations, so that at 1,200 to 1,800 metres the majority of patients are free from symptoms; (3) sojourn in mountainous country does not cure asthma.

72. Prophylaxis of Malaria.

V. MANDRU (*Paris méd.*, February 23rd, 1924, p. 181), as the result of many years' experience of malaria in the Rumanian army, comes to the following conclusions: (1) Every spleen that can be defined by percussion is enlarged. (2) In countries where malaria is endemic an examination should be made of all patients to determine whether the spleen can be percussed or not. (3) If the spleen is percussible, treatment by quinine, in doses of 2 grams a day for ten days at least, should be instituted. (4) Treatment with smaller doses of quinine is the cause of malaria passing into a chronic stage, and resistance to treatment is in direct proportion to the duration of the disease. (5) The duration of treatment and the cure of malaria should be determined by percussing the spleen.

Surgery.

73. The Diagnosis of Paranephritic Abscess.

H. J. LEVINSEN (*Ugeskrift for Laeger*, June 26th, 1924, p. 497) discusses the diagnosis of paranephritic abscess, using as his text three cases observed at his hospital during the past year. The interval between admission to hospital and an operation was four weeks, five weeks, and eight days respectively, the length of which intervals stressed the difficulty of arriving at a definite diagnosis. From a study of the literature of the subject the author concludes that it is exceptional for the symptoms early in the disease to point unequivocally to the seat of the mischief. It is more common for the pain to be referred for a considerable time to neighbouring structures, such as the pleura and hips, and paranephritic abscess has many a time been taken for hip disease. Sooner or later the pain is referred to the lumbar region, and tenderness with a boggy swelling in this region leaves little doubt as to the localization of the inflammatory focus. When the disease has reached this stage there are only a few conditions, such as tumour of the kidney or pyonephrosis, which are likely to be diagnosed, and the differential diagnosis should present no special obstacle, particularly when a paranephritic abscess has led to redness of the overlying skin. But early in the disease the conditions which a paranephritic abscess may simulate are almost numberless, and the author offers no single sovereign test wherewith to clinch the diagnosis. Only by a careful weighing of all the evidence is the clinician likely to escape the numerous diagnostic pitfalls which await him, and he is the more likely to evade them if he remembers that paranephritic abscess is not the rare disease it was formerly held to be. The author finds that a most careful examination of the urine may be misleading, since its composition is not invariably abnormal, except that it is concentrated. An *x*-ray examination early in the disease may be negative, and though an exploratory puncture is not likely to do harm its evidence is of value only when pus is found; failure to find pus does not exclude the diagnosis of paranephritic abscess.

74. Intestinal Obstruction complicating Appendicitis.

M. OUDARD (*Bull. et Mém. Soc. Nat. de Chir.*, June 14th, 1924, p. 660) records four cases of acute appendicitis complicated by acute intestinal obstruction. In all the cases the cause of the obstruction was identical—the fixation of the terminal portion of the ileum by adhesions. In three cases the obstruction followed a few days after the appendicectomy, in one case it occurred twelve days later. In the first two cases the author states that he did not take sufficient care to examine the condition of the termination of the ileum and to see that all adhesions were freed, giving a clear passage from the ileum to the caecum for the intestinal contents. It is also possible that in enfolding the stump of the appendix the ileum was encroached upon, so tending to its narrowing. With regard to the treatment of these cases, in one the adhesions were freed and the patient recovered without further complication. In a second case, as he was not satisfied with the freeing of extensive adhesions, an ileo-colostomy was performed, with a fatal result. The author now considers that such an operation is not advisable, and suggests that an ileostomy above the site of obstruction is safer under these conditions. In two cases where this was adopted the intestinal contents followed their normal course a few days after the enterostomy had been performed, and the fistulae were closed at a later date satisfactorily.

75. Fracture of the Head of the Radius.

K. SPEED (*Amer. Journ. of Surg.*, June, 1924, p. 157) classifies fractures of the head of the radius as complete and incomplete. These fractures are generally found in adult life, males being affected seven times more often than females, but fractures of the neck of the radius occur in adolescents. Fracture of the head is often associated with other lesions—such as fractures of the ulna, lower end of the humerus, or dislocation of the elbow-joint. After fracture of the radial head the patient appears holding his forearm in a position of 90 degrees flexion; he will not pronate or supinate his arm owing to pain, which is also elicited by pressure over the radial head. Swelling is usually delayed for a day or two, and crepitus is often absent. Progressive loss of function develops gradually and may ultimately, if neglected, lead to elbow ankylosis. Operative treatment is not desirable in children or adolescents. By direct pressure the fragment is forced into something approaching its normal relation, and the forearm is then fixed in full flexion. Movement is started in twelve to fourteen days, and a good functional result may be expected in most cases. In adults, removal of the head is primarily indicated, unless the lesion is a mere crack; the earlier this is done the better will be the functional result. A position of flexion and full supination is maintained for five to eight days in plaster-of-Paris. Active movements are then encouraged in an increasing range and the results are uniformly good.

76. Division of the Trigeminal Nerve in Man.

E. HARTMANN (*Ann. d'oculistique*, April, 1924, p. 241), discussing the effects of division of the trigeminal nerve, points out that the loss of superficial sensation after neurotomy shows that the associated fibres pass along the fifth nerve. He finds that both epicritic and protopathic sensations are thus lost: deep sensibility, however, was not affected in his cases, and it appears that these fibres do not run in the trigeminal nerve, but either in the facial or sympathetic nerves. Section of the nerve only affects superficial sensibility, and the fibres controlling the vasomotor and pupillary reactions and the regulation of intraocular tension are not affected. Immediately after the division of the nerve there was no inequality of the pupils, proving the absence of pupillo-dilators or constrictors in it. At a later stage there was some inequality of the pupils with contraction of the pupil of the affected side, retraction of the eyeball, and widening of the palpebral fissure, which effects are usually considered to be due to division of the sympathetic fibres running in the fifth nerve. This view is untenable, for the effect should be instantaneous, whereas it is actually delayed for a week or so. It is suggested that these results are due to the cicatrization of the roots of the nerve which are attached to the ganglion, and this would satisfactorily explain the stimulatory effects observed at this later period.

77. The Genesis of Renal Tuberculosis.

M. PERSSON (*Acta Chir. Scand.*, May 7th, 1924, p. 525) records two cases of renal tuberculosis which provided evidence of the manner in which tuberculosis begins in the kidneys. In 1908 Ekehorn suggested that the disease starts as a single haematogenous focus, which is usually situated within a papilla of the kidney. It communicates by a fistula with the renal pelvis, which in its turn becomes infected, and from which the disease spreads to the rest of the kidney. Since surgical treatment is rare in the early stage of renal tuberculosis, little evidence has hitherto been available for checking Ekehorn's claims, but Persson's two cases definitely supported them. In one patient, a man aged 44, the left kidney was found to be healthy except for a tuberculous cavity the size of a pea in one of the uppermost papillae. The cavity communicated by a microscopical fistula with the renal pelvis, the mucous membrane of which showed some minute early tubercles. There was also a very small ulcer on the surface of a papilla adjacent to the one in which the tuberculous cavity was found.

Anaesthetics.

78. Lumbar Anaesthesia and Fall of Blood Pressure.

H. ZIEGNER (*Zentralbl. f. Chir.*, May 31st, 1924, p. 1163) states that Bier in 1903 was the first to draw attention to the dangers of lumbar anaesthesia. As a rule, lumbar anaesthesia is always accompanied by a fall of blood pressure. The cause of this phenomenon and the associated collapse has received comparatively little attention. An attempt has been made to attribute it to damage to the spinal cord by the anaesthetic, which is supposed to reach the respiratory centre by the cerebro-spinal fluid. This explanation, however, does not tally with the fact that in severe collapse the reflexes of the upper extremities are preserved. Ziegner in 1919 drew attention to the fact that, with the onset of lumbar anaesthesia, priapism invariably occurred, except in advanced age, owing to engagement of the corpora cavernosa, just as after a transverse lesion of the cord. This vasomotor phenomenon appears after the smallest dose of the lumbar anaesthetics usually employed, and is an infallible sign whether the anaesthesia has been successful or not. If the sign is present there is no need to prick the skin or test the reflexes, while if it is absent anaesthesia has not been produced. The fall of blood pressure, therefore, is the result of paralysis of the vasomotor centres in the anaesthetized segments of the cord. As the splanchnic nerves are the most important constrictor nerves and principal regulators of the blood pressure, if paralysis of the vasomotor nerves in the splanchnic area occurs, as is always the case in deep spinal anaesthesia, the blood collects in the abdominal vessels, and death may take place from fall of blood pressure, just as after splanchnic anaesthesia. At present we do not possess any spinal anaesthetic which does not affect the vasomotor nerves, so that the risks of the method cannot be prevented.

79. Intratracheal Ether Anaesthesia.

R. E. WEAVER (*Med. Journ. of Australia*, May 24th, 1924, p. 506) contends that the intratracheal method of ether anaesthesia, while providing everything claimed for ordinary methods of administration, affords the additional advantages of lessened abdominal movements and greater muscular relaxation. The induction is even in depth, with a minimum of post-operative effects, and, should occasion arise, artificial respiration can be effectively performed through the tracheal catheter. About half an hour before operation a hypodermic injection of morphine (1/6 gr.) and atropine (1/100 gr.) should be given, the patient being anaesthetized in the ordinary way until there is complete relaxation of the masseter muscles. Under laryngoscopic guidance a No. 14 Belfast linen catheter is passed through the widely abducted cords down to the bifurcation of the trachea; this is connected with an apparatus (such as that invented by Dr. Lidwill of Sydney) for pumping air through an ether chamber. When the desired depth of anaesthesia has been obtained it is maintained by the air-ether regulating chamber, which, by providing for a definite percentage of ether, prevents any alteration in depth. Before the end of the operation pure air is passed down the catheter, and should the oral method be required this can be done by connecting the apparatus to an artificial airway in the mouth. For operations upon the upper air passages this method is obviously the best, since it provides a clear view to the surgeon, maintains an even anaesthesia in any desired posture, and the return current of air along the sides of the catheter assists in removing blood or mucus from the field of operation.

80. Reflex Rigidity under General Anaesthesia.

A. E. GUEDEL and K. R. RUDDELL (*Amer. Journ. Surg.*, Anaesthesia Supplement, April, 1924, p. 36), in considering reflex rigidity in abdominal operations, point out that this condition is caused by stretching the muscle, and is in proportion with the violence of such stretching. Peritoneal manipulation has nothing whatever to do with its causation, since the peritoneum is practically insensitive to all forms of traumatism. Under light anaesthesia the injuring of the mucous membrane causes slight reflex response, of the skin a sharper response, whilst the greatest response follows stretching of the muscle tissue. Nitrous oxide-oxygen anaesthesia alone will control pain reflex in either skin or mucous membrane, but is insufficient to control such reflex action when a muscle is forcibly stretched. Complete abdominal relaxation can be secured under light nitrous oxide-oxygen anaesthesia, when supplemented by infiltration of the muscles with novocain solution, without infiltrating the skin, fascia, or peritoneum; so that in order to secure complete relaxation it is only necessary to infiltrate the muscle.

Obstetrics and Gynaecology.

81. Treatment of Myomata.

G. SCHICKELÉ (*Paris méd.*, June 21st, 1924, p. 572) states that in his practice just over 50 per cent. of patients admitted to hospital for myoma are operated on, about 10 per cent. receive no treatment, and the remainder are treated by *x* rays or radium. Whatever the anatomical or pathological characters of the tumour may be, the age of the patient is a most important factor in deciding which treatment to adopt; radiotherapy is ineffective in patients aged from 20 to 30 having myomata twice the size of the closed hand, and it is not until about the age of 40 that such treatment competes with operation. Clear indications for operation are: (1) if the tumour be so large as partially to fill the abdomen and thereby cause distress; (2) compression of the bladder or rectum. Gangrene of the myoma as a rule necessitates operation, which, in the case of submucous tumours leading to dilatation of the cervix, is best performed by the vaginal route. Coexistence of inflammatory adnexal lesions has generally been regarded as a definite indication for surgical treatment, but recently reported favourable results from the treatment of chronic non-purulent pelvic inflammation by *x* rays have perhaps reopened the question. The operative is the wiser treatment in the case of a pediculated subserous myoma, which may become twisted or lead to other complications. In the author's opinion operation is the only effective (because the speediest) treatment in anaemia acute enough to threaten life as a consequence of haemorrhage from myoma. Rapid increase in size of the tumour is not admitted by him to be an absolute indication for operation; if a sarcomatous transformation has taken place no amount of operative haste is likely to prevent the subsequent occurrence of metastases, and increase in the size of the myomata is not uncommon at a menstrual epoch. Calcified myomata, and those which have resisted radiotherapy, should be operated on. Errors of diagnosis are made in about 8 per cent. of cases, and in about 10 per cent. diagnosis in the absence of operation is uncertain; the latter group of cases should come to operation. Recognition of a coincident pregnancy does not necessarily call for surgical treatment. Schickelé points out that while it is undoubtedly true that carcinoma may develop in the cervical stump left after hysterectomy for myoma (in 0.3 per cent. of cases in his material), yet, on the other hand, operative has the advantage over radiotherapeutic treatment that occasionally an unsuspected carcinoma of the corpus uteri is removed together with the myoma.

82. Pyelonephritis complicating Pregnancy.

J. C. APPLEGATE (*Therapeutic Gazette*, June 15th, 1924, p. 390) considers that pyelitis in pregnancy is generally associated with some coexisting nephritis, casts usually being present. Occurring in 8 per cent. of pregnancy cases it is more frequent in primiparae; one attack predisposes to another, and it may arise at any time after the second month. Lumbar pain is present frequently on the right side, and radiating downwards from the region of the kidney; it is accompanied by malaise, headache, fever, and frequency of micturition, the urine being scanty and concentrated. The chief danger to the child is a persistently high temperature for eight or more days, but the termination of the pregnancy is rarely indicated, averaging about 5 per cent. of the cases, when the child is viable and can be saved. In spite of the liability to recurrences, the prognosis is favourable under treatment by rest, milk diet, abundance of water, and the administration of sodium bicarbonate or potassium citrate alternating with urotropin. Since urinary and intestinal stasis are among the chief predisposing causes careful attention to the gastro-intestinal tract, to guard against stasis and colon bacilluria, is needed. In obstinate cases pelvic lavage with a silver salt or ureteral drainage may be necessary, but operations on the kidney during an active attack are to be condemned, and, in the absence of complications, Caesarean section is not indicated should it become necessary to terminate the pregnancy.

83. Caesarean Section in Placenta Praevia.

J. SCHULTE (*Zentralbl. f. Gynäk.*, May 17th, 1924, p. 1064) urges that the surgical treatment of placenta praevia is the one of choice. He gives his maternal mortality over a series of 25 cases as *nil*, but he points out that the prognosis depends on the rapidity with which the woman can be brought under observation after diagnosis and on the absence of infection. The advantages of Caesarean section in these cases, he emphasizes, are the avoidance of the following grave risks: post-partum haemorrhage, retained portions of placenta, sepsis, and the death of the child. He criticizes the other methods of treatment as follows: (1) Bipolar version generally stops bleeding, but there is a possibility that infection may occur, and the child is nearly always lost. (2) The use of metreurynters stops the bleeding, gives a slight danger of infection, and half the children are saved. (3) Vaginal Caesarean section stops the bleeding quickly, gives rise only to slight danger of infection, but the life of the child is jeopardized. (4) Abdominal Caesarean section, however, is a certain haemostatic, gives little chance of infection, and saves the child.

84. X-ray Treatment of Fibroids.

A. L. YOCOM (*Journ. of Radiol.*, May, 1924, p. 158) states that since the *x*-ray treatment of fibroids was first introduced by French radiotherapeutists in 1904 thousands of cases have been reported in all countries, and the success of the method has been satisfactorily proved. The advantages of *x*-ray treatment are that it is painless and safe, and, in properly selected cases, there are no failures. The menopause is not attended by any serious symptoms, since it is brought about gradually and so is not a sudden shock to the nervous system. If failures occur surgical treatment is still possible, but this is required in only 1 per cent. of the cases. The contra-indications laid down by Döderlein in his gynaecological clinic are as follows: (1) very large myomata extending above the umbilicus; (2) cases in which it is desirable to retain the menstrual function of the uterus; (3) myomata with malignant degeneration; (4) purulent or gangrenous myomata; (5) subperitoneal pedunculated myomata; (6) completely or partially prolapsed submucous myomata; (7) myomata with tumours of the adnexa; (8) myomata which cause compression symptoms. It usually takes from three to eight months for irradiated fibroids to disappear completely. Permanent cessation of menstrual function usually occurs after the third

month of treatment. In patients under 40, the treatment may be prolonged so as to produce a mild menopause. Suppression of the menstrual function occurs more readily after 40 than in younger individuals.

Pathology.

85. Wassermann, Sachs-Georgi, and Kahn Tests Compared.

ELIZABETH W. ROCKSTRAW and M. J. BENT (*Journ. Lab. and Clin. Med.*, June, 1924, p. 634) have compared the Wassermann, Sachs-Georgi, and Kahn tests, using 1,022 serums and spinal fluids. The Wassermann tests were put up in triplicate—one cholesterinized antigen with incubation in the water-bath for one hour, and two simple alcoholic extracts of beef-heart with incubation in the ice chest for four hours. The Sachs-Georgi test was performed according to Rice's technique, three antigens being used. The Kahn precipitation test, which differs from many of the other precipitation tests in the greater volume of serum and the greater concentration of antigen employed, was carried out in a manner essentially similar to that originally described by Kahn, but on account of the large amount of serum required it was found possible to use only one cholesterinized and one alcoholic antigen with a serum and antigen control. As regards results, it was found that the Kahn test with cholesterinized antigen was more sensitive than the Sachs-Georgi or the Wassermann tests with plain alcoholic antigen, but slightly less sensitive than the Wassermann test with cholesterinized antigen. In the case of untreated syphilis there was a close agreement (98.9 per cent.) between the Kahn and the Wassermann reactions; but in the case of treated syphilis the agreement was less marked (86.5 per cent.), the Kahn reaction frequently remaining positive when the Wassermann had disappeared. Comparison of the Sachs-Georgi with the Wassermann reaction showed that the former was often negative while the latter was strongly positive; and in the cases in which a positive Sachs-Georgi was obtained with a negative Wassermann reaction there was generally no evidence clinically of syphilis. In the case of spinal fluids the Kahn test proved to be of little value. Summing up, it would appear that the Kahn test should provide a very suitable control for the Wassermann test; it is simple to perform and has the advantage of detecting persistent abnormality in serums which have become Wassermann negative.

86. Streptococci in Heart Disease and Polyarthritis.

R. FREUND and E. BERGER (*Deut. med. Woch.*, May 16th, 1924, p. 625) confirm the findings of Schottmüller as to the etiological connexion between the *Streptococcus viridans* and endocarditis lenta. Using fluid culture media, as advocated by Petruschky, Poynton, and Paine, the authors have conducted bacteriological examinations of the blood of 113 patients, who were divided into two groups, the first group being represented by such diseases as endocarditis lenta, other forms of endocarditis, rheumatic polyarthritis, and sepsis. The second group included a great variety of diseases such as tuberculosis, malaria, malignant disease, and neurasthenia. In every one of the 19 cases of endocarditis lenta they found streptococci, which, in as many as 16 cases, were identified as "green" streptococci. In the remaining 3 cases they were haemolytic as well as "green." Among the 18 cases of acute endocarditis there was only one in which the bacteriological examination was negative; in 14 "green" streptococci, and in 3 haemolytic "green" streptococci, were found. Among the 23 cases of rheumatic polyarthritis there were 14, and among the 10 cases of sepsis there were 8, in which "green" streptococci were found in the blood. In the second group of mixed cases the bacteriological examination of the blood was almost invariably negative, but there were 2 cases of scarlatina, 2 of tuberculosis, and one each of erysipelas and cholangitis, in which "green" streptococci were found. When they were haemolytic they proved to be pathogenic to mice.

87. Effect of Insulin on the Respiratory Exchange of Normal Animals.

B. R. DICKSON, G. S. EADIE, J. J. R. MACLEOD, and F. R. PEMBER (*Quart. Journ. Exper. Physiol.*, April, 1924, p. 123) report on the effect produced by injections of insulin on the respiratory exchange of normal animals. Lowering of the blood sugar to between 0.05 and 0.06 mg. per cent. stimulated the respiratory centre and increased muscular tone. The onset of hyperpnoea and increased energy exchange occurred at varying intervals after injection, and at about the same time that the animals developed symptoms of hyperexcitability and restlessness. Convulsions resembling those of asphyxia eventually supervened, and the arterial blood often became venous in colour. This, with the marked increase in oxygen consumption, leads the authors to suggest that there is a development of abnormal metabolic products—the result of hypoglycaemia—which creates a demand for their oxidation; this demand is met by stimulation of the respiratory centre. Logan and Olmstead are quoted as having shown that insulin fails to produce convulsions in decapitated cats, and the conclusion is drawn that convulsions, with the preliminary muscular twitchings, must be due to stimulation, not of the lower motor neurones, but of the higher, located in the region of the cerebellum or the nuclei or the mesencephalon. The possibility is noted, however, that the increased muscular activity may be due to actual hyperexcitability set up in the muscles, in virtue of which they respond excessively to the normal stimulus of the higher neurones. Three possible causes are suggested for the rise in the respiratory quotient: (1) a greater relative increase in carbohydrate metabolism; (2) a reduction of carbohydrates to fat-like substances; and (3) an elimination of CO_2 as the result of hyperpnoea caused by the development of acid substances or by other conditions. Since the rise occurred before the hyperpnoea, the authors consider that there is no evidence in support of the last-mentioned possibility. In their opinion it can only be accounted for by an increased combustion of glucose occurring immediately after the injection of insulin, when the blood sugar is being rapidly lowered. They indicate one possible explanation of the disappearance of glucose following insulin. Proof exists that the injection of insulin into normal animals diminishes the glycogen stores, in contrast with its effect on diabetic animals where there is an increase. This they interpret as indicating that the sugar withdrawn from the blood and the glycogen from the tissues become converted into some intermediate form of carbohydrate which does not possess the property of reduction, and is, consequently, not included in sugar estimations, nor, from its reaction to alkalis and alcohol, can it be included in those of glycogen. The suggestion is made that insulin may produce similar intermediate and unrecognizable forms.

88. Hypoglycaemia in Lesions of the Liver Parenchyma.

W. STEINBRINCK (*Klin. Woch.*, June 3rd, 1924, p. 1029) draws attention to the hypoglycaemic reaction in lesions of the liver parenchyma. Mann and Magath have shown that in total or partial extirpation of the liver the blood sugar diminishes and hypoglycaemic symptoms follow. The same toxic symptoms occur in all severe lesions of the liver parenchyma ("glykoprive" intoxication of Fischler). In the early stage the symptoms of the hypoglycaemic condition can be checked by the administration of sugar, though often only temporarily. The author refers to the sinking of the blood sugar after chloroform narcosis, and the prophylactic and therapeutic value of sugar administration. For some time in the Breslau Hospital intravenous sugar infusions have been employed in all severe lesions of the liver parenchyma, such as those caused by salvarsan, and in poisoning by the fungus *Agaricus bulbosus*. Macleod has pointed out that when the blood sugar falls below 0.075 per cent. the patient feels tired and anxious; tremors, chilliness, and sweating follow. As the blood sugar diminishes further mental symptoms—delirium and coma—occur. In animals the poisonous fungus *Agaricus bulbosus* produces almost the same symptoms and sugar reduction, which the author was able to check by the injection of sugar. In all severe lesions of the liver large and repeated intravenous injections of sugar are to be recommended.

89. Bacteriophage Inactivity in Gelatin Media.

THE addition of certain antiseptics to the culture medium, while failing to inhibit the growth of the organism, interferes very seriously with the activity of the bacteriophage inoculated simultaneously, and this has been found true of certain colloids. To investigate this phenomenon P. BRUTSAERT (*C. R. Soc. de Biologie*, May 16th, 1924, p. 1292) studied the effect of the addition of gelatin to a broth culture inoculated with a mixture of a bacteriophage and a highly susceptible organism. Three strains of bacteriophage were chosen, labelled d'Herelle, Shiga, and typhoid. Two drops of bacteriophage and one drop of the microbe were inoculated into a tube of 12 per cent. gelatin, which was then incubated at 37° C. After twenty-four hours a portion of the culture was heated to 56° C. to kill the bacteria and isolate the bacteriophage. This was then inoculated into a fresh tube of gelatin, which was treated in the same manner; and so on for six times. The last tube in the series was examined by the usual technique for the presence of the bacteriophage. It was found that only in one case—that of the d'Herelle strain—had the bacteriophage survived; and even this, when tested on the organism with which it had been grown, proved to be inactive. It appears, therefore, that in gelatin media the bacteriophage loses its activity, and may actually be destroyed.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

90. Therapeutic Value of the Bacteriophage in Typhoid Fever.

D. HERDERSCHÉE and L. K. WOLFF (*Nederl. Tijdschr. v. Geneesk.*, June 14th, 1924, p. 2706) record their experience of 95 cases of typhoid fever treated with d'Herelle's bacteriophage at the Wilhelmina Hospital, Amsterdam, as compared with a series of 105 not so treated. Instead of a single injection, as recommended by previous observers, two, and in some cases three, injections were given, with two or even three days' interval between each. The treatment was employed only in undoubted cases of typhoid fever in which the bacilli had been cultivated from the blood, or the agglutination titre, examined in two different laboratories, was higher than 1 in 100. The ages of the patients were as follows: of 105 treated with the bacteriophage 22 were under 10, 38 between 10 and 20, and 45 above 20; of the 95 controls 19 were under 10, 36 between 10 and 20, and 40 above 20. The results were as follows: of the 95 treated by the bacteriophage 20 died, including 11 from intestinal haemorrhage and 4 from peritonitis; while among the 105 controls there were 15 deaths, including 6 from haemorrhage and 2 from peritonitis. While no bad effects followed the treatment, in no instance was a recovery seen in twenty-four to twenty-six hours after the injection. Unlike Beckerich and Hauduroy, who observed a crisis twenty-four to forty-eight hours after the injection, the present authors did not see any distinct effect on the temperature as a result of the treatment. The average duration of the fever in cases treated by the bacteriophage was twenty-two days, as compared with twenty days in those not so treated. Twelve relapses were observed among the cases treated, as compared with ten among the controls. The authors conclude that while it is possible that better results may be obtained by a change in the preparation of the bacteriophage or improvement in technique, at the present time abstention from treatment of typhoid fever by the bacteriophage cannot be regarded as a mistake.

91. Observations on a Group of Marathon Runners.

B. GORDON, S. A. LEVINE, and A. WILMAERS (*Arch. Intern. Med.*, April 15th, 1924, p. 425) examined all the competitors in the American Marathon race just before the contest. They classify their observations thus: (1) vital capacity of the lungs before and after the race; (2) effect of the race on the size of the heart; (3) blood pressure and general considerations. (1) In regard to vital capacity, this varied greatly from below to above normal, and there was no definite relation between vital capacity of the lungs and the order in which the runners finished. (*a*) The average vital capacity was normal, indicating that prolonged vigorous training did not increase the breathing space of the lungs. (*b*) There was a fall of 17 per cent. in vital capacity immediately following the race, with a return to normal in twenty-four hours. (2) The authors agree with the majority of recent observers that the size of the heart in these runners, as determined by *x* rays, is not increased; this indicated that many years of vigorous training did not produce cardiac hypertrophy; immediately after the race there was a temporary decrease in size, the heart returning to normal in about twenty-four hours. (3) In most cases, immediately after the race the systolic pressure was found to be approximately normal, while the diastolic pressure was definitely reduced. During the following hours the systolic pressure fell, then both systolic and diastolic pressures returned to normal. Many of the men complained of pain in the right hypochondrium; this occurred after running two or three miles. Others suffered later in the race from slight nausea. The majority suffered from pain and stiffness in the legs and blistered feet at some time or other during the race, but none complained of dyspnoea or of pain in the chest. No râles were heard in the lungs and the liver edge could not be felt. The authors conclude that, given a normal heart, the most important part of training is that of the legs rather than of the chest.

92. Urobilin in Malarial Patients.

BALLERSTEDT (*Arch. f. Schiffs- und Tropen-Hyg.*, March, 1924, p. 100) examined twenty cases of tropical malaria and five of other diseases at the Hamburg Institute for Naval and Tropical Diseases for the presence of urobilin, and came to the following conclusions: (1) The increased excretion of urobilin in the urine and stools bears a direct relation to the severity of the attack in recent infections and, as a rule, diminishes gradually. (2) The duration of the increase of urobilin in the urine and stools and its amount vary in different cases. Urobilin may be found in the urine and stools in convalescence long after the cessation of the attacks. (3) Urobilin is always excreted in greater quantity in the stools than in the urine, and the return to normal in the case of the stools occurs more slowly than in the case of the urine. (4) In view of the fact that slight urobilinuria may occur in normal persons, urobilinuria of mild degree in the absence of other symptoms, such as enlargement of the spleen and mononucleosis, is no proof of latent malaria. (5) The nature of the malarial parasite does not produce any appreciable difference in the excretion of urobilin in the urine and stools. (6) Quinine treatment has no effect on the excretion of urobilin, either in a positive or negative sense. After quinine treatment the malarial parasites disappear from the blood in two to four days, but the urobilinuria persists much longer. (7) As a rule, the largest quantity of urobilin in the urine and stools was found during defervescence and in the apyrexial interval. (8) There was no difference in the amount of urobilin excreted whether the blood contained parasites or not. (9) The excretion of urobilin was almost the same in first attacks and relapses. The relapse was always accompanied by an increase in the excretion of urobilin, though the amount excreted was not so high as in the first attack. (10) The liver function is damaged in the course of chronic malaria, in consequence of being flooded with large quantities of urobilin. As a result the liver is enlarged in subjects of chronic malaria. (11) The quantities of urobilin excreted in the urine and stools did not correspond to the haemoglobin values. There was usually a haemoglobin content of 80 to 90 cent., whereas the urobilin was found in much larger quantities.

93. Acute Syphilitic Meningitis.

BALTACEANU (*Bull. et Mém. Soc. Méd. des Hôp. de Bucarest*, February, 1924, p. 37) states that lumbar puncture shows that meningeal reactions are almost constant during the secondary period of syphilis. Syphilitic meningitis is only the local manifestation of a general infection; sometimes it becomes acute, resembling other forms, especially tuberculous meningitis. This may occur at any period after the primary infection (from four weeks to one year according to various authors). Secondary syphilitic meningitis, although generally diffuse, attacks particularly the lateral aspect of the frontal lobe. Basal localization is relatively common, and when this is the case there are cranial nerve lesions—especially oculomotor and facial, the latter being of the peripheral type. Very rarely there is an auditory nerve lesion at the same time, as in the following case. A man, aged 37, was admitted with intense headache, stiffness of the neck, vomiting, and right facial paralysis. Six months previously he had had a syphilitic chancre. He received antisyphilitic treatment for six weeks only. Headache, vomiting, and rigors commenced fourteen days before admission, followed seven days later by diplopia and deafness; three days after this right facial paralysis occurred. On admission he was very deaf, and complained that the severity of the headache prevented him from sleeping. Kernig's sign was definite, and the left mastoid region was painful on pressure. There was peripheral right facial paralysis, persistent diplopia, and inequality of pupils, the right being larger than the left, and reacting sluggishly to light. The knee-jerks were brisk and the Babinski reaction absent. The Wassermann reaction of the cerebro-spinal fluid was strongly positive. Daily injections of 0.01 gram of mercuric cyanide were given for a week with no improvement, but there was rapid improvement when this was replaced by neosalvarsan and quinine iodobismuthate. Twenty-seven days later the patient had no symptom other than slight deafness, equal on both sides. Baltaceanu comments on the number of cranial nerves involved, and states that such lesions as these of both auditory nerves with left mastoiditis, of the right facial and the oculomotor nerves with disturbance of accommodation, are very rare during the secondary period of syphilis, but are much more frequently found during the tertiary stage. The lesions may be due to the presence of (1) exudate, (2) inflammatory oedema, (3) local meningo-encephalitis, or (4) endarteritis. In a case of acute syphilitic meningitis Fahr found in the frontal lobe a number of spirochaetes—apparently the starting-point of a generalized meningitis. Baltaceanu considers it probable that there was a similar etiology in this case.

Surgery.

94. Operation for Cancer of the Rectum.

R. C. COFFEY (*Surg., Gynecol. and Obstet.*, June, 1924, p. 723) points out that few parts of the body are so favourably situated as the rectum for complete removal of all the tissues involved in cancerous invasion. Cancer of the rectum spreads by direct extension, through the venous and lymphatic systems. The radical operation imposes a great strain upon the vitality of the patient; it is perhaps the largest operation in surgery. The author considers the operation which he has evolved to be the best and safest type of the two-stage operation, which fulfils all the necessary requirements. The first step is common to all cancer operations. The abdomen is exposed through a right rectus incision, and the operator, having decided to do the radical operation, isolates the sigmoid and ties the superior haemorrhoidal artery. The sigmoid is severed between the clamps and the proximal end brought out through the left rectus muscle to make a permanent colostomy. A rectal tube is now passed up through the sigmoid and fixed in position; it is then pulled on, the gut is inverted, and brought out through the anus. All raw surfaces are closed, and the abdominal wound sutured. At the second stage, an incision is made from the sacrum encircling the anus, and the last joint of the sacrum and coccyx are removed. The hand is then inserted into the wound, and the growth and the rectum are peeled out with ease and completeness. In extensive cases a large dose of radium is packed into the wound. In 47 cases operated on in this way two have died, and the ultimate results in the others appear good so far.

95. Splenectomy for Rupture of the Spleen.

M. AUVRAY (*Bull. et Mém. Soc. Nat. de Chir.*, June 21st, 1924, p. 703) records two cases of traumatic rupture of the spleen with interesting features. In the first, operation was carried out one hour after the injury, there being symptoms of severe internal haemorrhage. The second case was one of those rare ones in which rupture is followed by a long latent period; for sixty-eight hours this patient exhibited no symptoms of splenic rupture, and the operation was performed seventy hours after the injury. In the first case reported there was a tearing of the pedicle associated with a rupture of the spleen itself, which necessitated removal of the organ. Two weeks after removal the red cells numbered 2,300,000, whilst about three weeks later a count showed 4,500,000 red cells present. In the second type of case it is possible that the injury leads to an intracapsular rupture, and the signs of haemorrhage do not become apparent until the capsule ruptures owing to the pressure of the extravasated blood. The only symptoms noted during the latent period were rigidity of the abdominal muscles in the left hypochondrium, increasing pulse rate, and a lowering of the blood pressure. These signs following an injury would lead one to suspect a "silent" rupture of the spleen, but it is possible that they may not always be present. Both patients made a satisfactory recovery after operation, and were remarkable for the great desire for food they exhibited during convalescence. This supports the theory that the spleen has some influence on general nutrition, probably in the assimilation of carbohydrates.

96. Picric Acid as a Skin Disinfectant.

W. TÜRSCHMID (*Zentralbl. f. Chir.*, May 24th, 1924, p. 1128) states that Mitchell in 1911 first drew attention to the germicidal action of picric acid, and was followed by Gibson in 1919, who found that a 5 per cent. alcoholic solution was superior to tincture of iodine because it did not cause any irritation of the operation field and was also decidedly cheaper. Hewitt's experiments in 1922 showed that skin was no longer sterile at the end of three-quarters of an hour after it had been painted with ether, alcohol, and 3 per cent. tincture of iodine, but remained sterile after it had been painted with iodine in benzine, 7 per cent. tincture of iodine, and picric acid. Gibson had very successful results in 437 cases. Slek and Türkel, who used a 5 per cent. alcoholic solution of picric acid, came to the following conclusions: (1) Picric acid hardens the upper layers of the skin and thus prevents the organisms in the deeper layers invading the site of operation. (2) Picric acid does not irritate the exposed peritoneum or cause peritoneal adhesions. (3) It does not have any injurious effect on instruments. (4) It does not produce eczema or inflammation of the skin even of the most sensitive parts, such as the scrotum. (5) It is three times cheaper than tincture of iodine. Türschmid states that a 5 per cent. alcoholic solution of picric acid has been used on 170 cases in the General Hospital at Nowy Targ in Poland, and has proved to be an excellent skin disinfectant. The skin is washed once or twice with benzine, according to its state of cleanliness, and the operation area is then painted with the picric acid solution for ten to twenty seconds. The cases included 52 hernias, 33 thyroidectomies, 20 appendicectomies, and 37 other aseptic operations. In only 6 did suppuration occur, which was of a slight and superficial character. The discoloration of the skin caused by picric acid is readily removed by a 25 per cent. alcoholic solution of ammonia.

97. Acute Pelvic Abscess in Children.

P. ROSENBLUM and R. B. BETTMAN (*Amer. Journ. Dis. Children*, April, 1924, p. 336) report two cases of pelvic abscess of unknown origin in girls, aged respectively 2 and 9 months, cured spontaneously by rupture into the vagina, and notes of two other cases are given as being of etiological interest. In the first patient a sudden attack of fever and fretfulness ended in two days with the occurrence of a profuse, greenish, and odourless vaginal discharge. Six weeks later, and again three months subsequently, the symptoms were repeated, the child, during the intervals, and at 10 months old, being apparently well. In the second case there was a previous history of a purulent otitis and throat inflammation, with high temperature lasting over a month, at which time the right thigh was held flexed on the abdomen, efforts to extend it being painful. By the fluoroscope a mass was seen in the right flank, and during slight extension of the thigh the abscess ruptured into the vagina, complete recovery following. While throat conditions are frequently associated with abdominal pain in childhood, it is possible that some pelvic abscesses may arise from infection involving the lymph glands. Although appendix abscesses may rupture spontaneously, they almost invariably do so into the bowel. The fact that pyosalpinx may occur in infants must be borne in mind as a possible causative factor.

Laryngology and Otology.

98. After-treatment of Tracheotomy by Bronchoscopy.

L. H. CLERF (*Surg., Gynecol. and Obstet.*, April, 1924, p. 472) finds that statistics from various hospitals show a mortality of 10 to 20 per cent. following tracheotomy. In his cases there has been no operative mortality, and a post-operative mortality of only 1 per cent. Tracheotomy is a means to an end: it does not ensure a permanent free airway. Close observation of every tracheotomized patient is imperative. An increased respiratory rate and signs of dyspnoea rarely mean pulmonary complications. The most common cause of dyspnoea is mechanical obstruction to the airway; this may be due to secretion or to a badly fitting cannula. Any case of dyspnoea not relieved by fitting a clean cannula should have a bronchoscopy, in order to see why the air is not getting down to the lungs. Obstructive dyspnoea is impossible when the tracheotomy tube and bronchial tubes are patulous. A bronchoscope or a mechanical aspirator should be at the bedside of every tracheotomy case; these may be the means of saving life. When there is total absence of the cough reflex, often seen in children after tracheotomy, the patient will die unless the secretions are removed mechanically. A case is recorded where bronchoscopy was performed seventeen times for the removal of crusts and secretion, and the child, previously restless, slept peacefully until there was a recurrence of the obstruction to the airway.

99. Mediastinal Disease and Oto-Rhino-Laryngology.

G. PORTMANN and P. FORTON (*Rev. de Laryngol., Otol. et Rhinol.*, March 31st, 1924, p. 177) remind specialists that they are medical practitioners first and specialists afterwards, and instance the frequency with which the specialist in oto-laryngology encounters a series of symptoms in his own domain which are referable, however, to no local lesion but to some morbid condition in the mediastinum. They divide this cavity into the anterior mediastinum, which contains the heart, the great vessels, the recurrent laryngeal and the phrenic nerves, and the posterior mediastinum, which contains the oesophagus, thoracic aorta, the azygos veins, thoracic duct, the vagus, and the sympathetic nerve trunks. These organs are lying in a mass of cellular connective tissue which is liable to disease, such as syphilis and infection, and has in its substance the important groups of lymphatic glands. The "syndrome mediastinal" consists of a series of symptoms which are due to pressure on these various structures in the mediastinum. The veins are much more easily affected than the arteries on account of their thinner walls, and the result of mediastinal pressure is shown by

distended subcutaneous veins, and in cases where the collateral circulation is poor by oedema of the arms, face, and thorax. The eyes are injected and the patient suffers from vertigo, epistaxis, and headache. Compression of the pulmonary vessels may be followed by a certain amount of haemoptysis. Pressure on the recurrent laryngeal nerve gives rise to laryngeal spasms, paroxysmal dyspnoea, and periods of suffocation. The voice is profoundly changed, becoming bitonal, and the affected cord is found at first in the median line and later in the cadaveric position. Anginal pains follow irritation of the cardiac plexus, while irritation of the sympathetic gives rise to changes in the pupil and paralysis, to the syndrome of Claude Bernard–Horner, myosis, narrowing of the palpebral fissure, and retraction of the eyeball. Irritation of the phrenic nerve causes persistent hiccup. Compression of the oesophagus brings about difficulty in swallowing solids at first, followed by spasmodic dysphagia, which is excited by liquids more than by solids. Deglutition becomes painful at an early stage of the dysphagia. Compression of the bronchus leads to a reduction or loss of breath sounds over the lung, but the resonance of the lung is retained. When the larger air passages are diminished in calibre there is a characteristic stertorous breathing. Marked compression of the bronchus leads to retraction of the chest wall. The pathology of the mediastinal tumours comprises thoracic aneurysm, cancer and hydatid cyst of the lung, cancer of the oesophagus, and tumours of the mediastinum proper, which include tuberculous glands, and glandular deposits of lymphadenoma, leukaemia, and lymphosarcoma. Other rarer tumours are sarcoma, epithelioma, degeneration of the thymus and endothoracic goitre. Syphilis of the glands or of the mediastinal cellular tissue gives rise to the symptoms described, and improves in a remarkable manner under specific treatment.

100. Differential Diagnosis of Laryngeal Paralysis.

L. BAR (*Rev. de Laryngol., Otol. et Rhinol.*, February 29th, 1924, p. 110) records a case of paralysis of one vocal cord which recurred several times during eight years. In spite of a previous thyroidectomy and a history of acute cold before one at least of the attacks, the author considered that the condition was arthritic in origin. He discusses the various types of paralysis met with, and classifies them as due to neuro-muscular defect or to a mechanical hindrance to the movement of the cords or of the arytenoid cartilages. Scarring of the larynx following old disease, certain forms of acute and chronic oedema, and masses of thickened tissue in the interarytenoid space are visible hindrances to movement. Arthritis of the crico-arytenoid joint may give rise to redness, swelling, and thickening, whilst certain vegetations and tumours obviously hinder movement. Some forms of perichondritis do not give any signs of redness or swelling, especially when following a cold or exposure, but may partly or wholly paralyse the cord. In tuberculous laryngitis there is often paralysis before any other sign appears in the larynx, and this may be due to muscular atrophy and absorption of the contractile tissue. In these cases actual tubercles have been found in the substance of the muscles. A small invisible subglottic cancer has caused absolute paralysis of one vocal cord. In sudden and complete paralysis the diagnosis of hysteria is usually made. In certain cases of catarrhal laryngitis an extra chill or other form of exacerbation is followed by paralysis, due to direct implication of the muscles, usually the internal thyro-arytenoid and the arytenoideus, which are nearest to the mucosa. These paralyses are usually fleeting, but sometimes persist for long periods. There are a number of cases in which the immobilization is due to contracture of the adductor muscles, and such conditions must be diagnosed from abductor paralysis. During phonation in a case of contracture the arytenoid is carried in front of, and in the mirror appears to be a little above, the healthy cord, and with its cord passes the middle line. On inspiration this cord remains in the position of phonation and keeps a straight edge. In cases of paralysis the cord is not so tense and vibrates in the stream of air in respiration and phonation. These two types of immobilization can be differentiated by the position of the arytenoid and the tenseness of the cord.

101. Speech Defects after Encephalitis Lethargica.

I. VASILO (*Arch. Internat. de Laryngol.*, May, 1924, p. 565) reports the case of a child, aged 8 years, who, in the course of convalescence after an attack of encephalitis lethargica six months previously, developed a spasmodic affection of the tongue. At the beginning of the attack speech was quite normal, then the tongue contracted spasmodically and became curved laterally, the mouth remained open, and the saliva dribbled. The spasm lasted for a few seconds and then speech became normal again.

Obstetrics and Gynaecology.

102. Hypertrophy of the Breast.

ACCORDING to E. I. BARTLETT (*Surg., Gynecol. and Obstet.*, June, 1924, p. 798), breast hypertrophy is a clinical entity to which have been accorded some thirty different names, including chronic cystic mastitis, senile parenchymatous hypertrophy, abnormal involution, and Schimmelbusch's disease. Its anatomical characters are different from those of tumours or infections, and non-surgical treatment is invariably successful. From analysis of a series of 125 cases of breast hypertrophy, of which 68 earlier ones were treated surgically and studied histologically, the following conclusions are drawn. Breast hypertrophy is a disorder chiefly of the ages 20 to 50, more especially of the fourth and fifth decades; marriage, virginity, lactation, and pregnancy have little etiological bearing. Differential diagnosis is based on four points: pain, multiplicity, position, and shape. Pain is almost invariably reported, usually in combination with tenderness; pain or tenderness is present in about 50 per cent. of benign breast tumours, while cancer is not tender except in the presence of ulceration, and is painful only in the later stages when convincing signs of malignancy are present. Multiplicity of the lumps or occurrence in both breasts practically excludes a diagnosis of malignant disease; both these features are very common in breast hypertrophy. Hypertrophy frequently involves a whole lobulus from nipple to periphery, giving a radial Indian-club shaped mass; where more than one lobulus is affected a quadrant, a hemisphere, or the whole breast may be thickened. The shape of the lump is significant in that hypertrophy follows the form of the gland tissue. Often the lump is flat and of equal thickness throughout, or variations in thickness can be shown to be due to superficial projections; on the other hand, a buried lump, if cystic or cancerous, is always thickest towards its middle point, giving the impression of a spherical mass. Superficial breast lumps are either benign tumours or hypotrophies. In the absence of pain or tenderness and of multiplicity about 25 per cent. of buried tumours must be explored in order to determine their cystic or cancerous nature or to prove that a cyst is not associated with cancer.

103. Antispasmodic Drugs in Sterility.

S. R. MEAKER (*Journ. Amer. Med. Assoc.*, June 28th, 1924, p. 2098) points out that there exists a definite group of sterile women whose Fallopian tubes are hardly patent to gas, though they are anatomically normal and adhesions are absent. He suggests that the obstruction in them is due to spasm of the circular muscle in the interstitial portion of the tube, and that this may result in sterility, spermatozoa being prevented from entering the tubes. He reports five cases in which the administration of benzyl benzoate in 20 per cent. alcoholic solution was successful in overcoming the obstructions, and recommends the use of this drug in cases in which there is no evidence of disease or abnormality in the husband or wife.

104. Vaccine Therapy of Gonorrhoea.

F. WOLFF (*Zentralbl. f. Gynäk.*, May 17th, 1924, p. 1058) discusses the relative merits of proprietary brands of vaccines in the treatment of gonorrhoea in the female. The conclusion he comes to is that a large enough percentage of cures result after three to five injections in the course of fourteen days to make the method worthy of consideration; it tends to shorten the disease and, in puerperal cases especially, prevents further spread. He describes the treatment, which consists of injections of living gonococci. The technique is slow and laborious, and includes the incubation of the organisms for two days, the preparation of an emulsion in saline, and the injection of it subcutaneously. The dose, he points out, is surprisingly small—namely, about 1½ million. He has treated fourteen patients in this way, six of whom were cured after one injection. He claims for the method that it is harmless, that it gives a fair percentage of cures, and that the systemic disturbances are relatively slight, so that the patient need not be confined to bed.

105. Dysmenorrhoea and Spasmophilia.

HIRSCH (*Arch. de med., cir. y esp.*, June 21st, 1924, p. 593) maintains that a mechanical cause for essential or idiopathic dysmenorrhoea can be excluded on the following grounds. In 300 autopsies he made measurements of the cervical canal and never found an anatomical stenosis. Moreover, in catheter examinations of women he has never met with stenosis of such a degree as to prevent discharge of menstrual blood or the penetration of spermatozoa, and in cases in which he has performed catheterization during the monthly period he has never found any obstruction to the flow. He has also found

the uterus quite free from any accumulation of blood both in the painful pre-menstrual stage and at the end of menstruation. On the other hand, he regards dysmenorrhoea as a symptom not of a local but of a general disease which is met with in asthenic, hypoplastic, neurasthenic, and spasmophilic subjects. Asthenic patients are characterized by a general ptosis of the viscera associated with a great laxity of the paracervical cellular tissue and parametrium, and in such cases tonic treatment and gymnastics are indicated. In spasmophilic subjects, who form about 30 per cent. of the cases of dysmenorrhoea, the treatment should consist in the employment of an anaesthetic such as novocain during the attacks and the application of a treatment on a calcium basis in the intervals. Hirsch has been in the habit of giving intravenous injections of aphenil (10 per cent. solution of an organic compound of calcium chloride).

Pathology.

106. The Central Nervous System in Botulism.

HITHERTO it has been generally held that the paralytic features encountered in poisoning by the toxin of *B. botulinus* are of central origin, but recent work along physiological lines has tended to show that they result from the action of the toxin on the peripheral nerve endings. To determine which of these hypotheses is correct E. V. COWDRY and F. M. NICHOLSON (*Journ. Exper. Med.*, June, 1924, p. 827) have carried out extensive examinations of the brains of mice, guinea-pigs, and rabbits which had been injected with *B. botulinus* toxin and killed when pronounced symptoms of poisoning had appeared. The most satisfactory preparations were obtained by simple treatment with Giemsa's stain after fixation in Zenker's fluid without acetic acid; several other methods were employed, including vital staining with trypan blue. Their observations convinced them that the only noticeable abnormality in the brains of these animals was a slight degree of congestion of the blood vessels of the meninges and the base of the brain, but even this was not always present. Changes in the Nissl bodies, in the cell processes, and in the mitochondria could not be substantiated, the changes actually found being no more marked than in control animals. The perivascular and focal cell infiltrations occasionally found could not be correlated in any way with the action of the toxin. This absence of any definite evidence of action of the toxin on the central nervous system inclines the authors to consider more favourably the hypothesis that its main site of action is on the peripheral nerve terminals.

107. The Bacteriology of Appendicitis.

S. V. BAGGER and O. MIKKELSEN (*Hospitalstidende*, April 30th, May 7th and 14th, 1924, pp. 284, 289, and 305) have made a bacteriological examination, at the time of operation, on 200 cases of acute and 19 cases of chronic appendicitis. These investigations were conducted in hospitals in Copenhagen, and material for bacteriological examination was collected at various intervals during the operation, from the stage when the peritoneum was first opened to that at which the appendix was removed and could be dissected. After giving an account of their technique, the authors state that two kinds of bacteria were found to be particularly common, either together or in almost pure culture—namely, coliform bacilli and Gram-positive ovoid diplococci. The latter were probably identical with Dible's enterococci, which the authors also found in 16 out of 46 normal intestines which they examined. In almost every case of acute appendicitis coliform bacilli were found, and in 18 cases these bacilli were found in pure culture; these were far from being light cases of appendicitis, and gangrene was found in some of them. In about a quarter of all the cases the only bacteria found were coliform bacilli and enterococci. In 119 out of 160 cases (74 per cent.) these two germs were found either alone or in company with other germs. In 3 cases only were enterococci found in pure culture, and these cases were light. Streptococci in pure culture were found only in 2 cases, and in one case there was an almost pure culture of the *Staphylococcus aureus*.

108. Tetanus Anatoxin.

THE work of Ramon on the preparation of diphtheria anatoxin was dealt with in our columns of February 23rd (Epitome, p. 32, para. 176) and of March 22nd (Epitome, p. 44, para. 247). P. DESCOMBEY (*C. R. Soc. de Biologie*, July 4th, 1924, p. 239) has directed his attention to tetanus toxin with a view to repeating the experiments relating to the modification of crude toxin. Taking a toxin whose minimal lethal dose for the guinea-pig was one ten-thousandth of a cubic centimetre, he submitted it to the action of formaldehyde and heat, and found that it was now so depleted of its toxic fraction that a guinea-pig could withstand from 5 to 10 c.cm. injected subcutaneously without developing any symptom of disease. If 20 c.cm. of the crude toxin be treated with 0.3 c.cm. of tetanus antitoxin flocculation occurs in an hour and a quarter at a temperature of 45°C. If the amount of antitoxin required to flocculate the toxin which has been submitted to the action of formaldehyde and heat—known as anatoxin—be worked out, it is found to be the same as before—namely, 0.3 c.cm., indicating that the treatment of the toxin deprives it of toxicity without affecting its capacity for flocculation. It is found, moreover, that the anatoxin has a high antigenic power, so that when it is injected into animals it gives rise to the production of a true antitoxin. Thus, if 1 c.cm. be injected subcutaneously into a guinea-pig, the animal at the end of three weeks is able to withstand the injection of several minimal lethal doses of crude toxin. Similarly, a horse which is given two doses of anatoxin at an interval of fourteen days will suffer the injection of thirty minimal lethal doses of toxin two weeks later without any disturbance. Although the amount of antitoxin required to flocculate the anatoxin is the same as that required to flocculate the crude toxin, there is a difference in the time taken for flocculation to occur; in the case of the anatoxin it is longer, and it depends on the particular anatoxin under consideration. By careful experiment it has been shown that the shorter the time the better the antigenic quality of the anatoxin. With a good anatoxin it has been possible, by the injection of a single dose of 0.5 c.cm. into a guinea-pig, to render the animal, within a month, resistant to no fewer than 500 minimal lethal doses of toxin; so that the immunizing possibilities of this atoxic product appear to be very great.

109. Insulin and Glucose Destruction.

G. AHLGREN (*Klin. Woch.*, June 24th, 1924, p. 1158) points out that the discovery of insulin has furnished new possibilities in the discussion of the old controversy as to whether hindered sugar destruction or increased sugar production is the cause of the hyperglycaemia of diabetes. Using Thunberg's methylene-blue method, the author has shown that tissues which possess no power of sugar destruction acquire that power by the addition of a suitable quantity of insulin. In his experiments the tissues were taken partly from normal animals, partly from animals made diabetic by total extirpation of the pancreas. When insulin is present in the tissues a transformation of the glucose molecule occurs. The experiments can be made advantageously with the muscles of normal "winter" frogs. The insulin concentration is important—if too great no effect is obtained. The experiments show that the presence of insulin promotes the glucose destruction; and the author considers that the hyperglycaemia which follows in diabetes, through deficiency of insulin, must have an essential cause in a diminished or arrested glucose destruction. By previous experiments, made on frogs rendered diabetic by extirpation of the pancreas, the author has demonstrated a disturbance of the glucose destruction in diabetes. The muscles of the frogs were unable to destroy glucose; only after the addition of insulin did a powerful destruction of glucose occur. The results of other experimenters are discussed. The author considers that the transformation of the glucose molecule, which is necessary for its further destruction in the organism, cannot be accomplished by insulin alone. We must suppose that, in addition to insulin, some unknown substance is present in the tissues, which appears to be destroyed in a relatively short time after the muscle is removed from the body.

110. Inefficacy of Hexamine in Rabies.

P. REMLINGER and P. BEL (*C. R. Soc. de Biologie*, May 23rd, 1924, p. 1312) carried out the following investigations at the Tangier Pasteur Institute to determine if hexamine, which has been advocated in various forms of encephalitis in man and animals, had a preventive or curative action in rabies. Twenty-one guinea-pigs of approximately equal weight were given deep intramuscular injections in the nuchal region of 5 c.cm. of very virulent street virus, which killed a rabbit in six to seven days, and were then divided into three groups. The first group was given subcutaneous injections daily of 2.5 c.cm. of a 20 per cent. solution of hexamine. The second group, in addition to the daily subcutaneous injections, was given 0.5 c.cm. of the same solution, which was injected through the orbit into the cranial cavity every other day. The third group served as controls. A week after the first injection rabies began to appear. The injections of hexamine were continued until death. The results were as follows: (1) All the animals treated by subcutaneous and intracerebral injections died. (2) One of the animals treated by subcutaneous injections only survived. (3) Two of the controls survived. Generally speaking, the incubation and duration of the disease were shorter in the treated cases. Hexamine thus proved a complete failure in the prevention and cure of rabies.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

111. Late Rickets and Osteomalacia.

H. S. HUTCHISON and G. STAPLETON (*Brit. Journ. Child. Dis.*, January–March, 1924, p. 18, and April–June, p. 96) review the literature and record their own observations on late rickets and osteomalacia in India, their conclusions being as follows: (1) In osteomalacia the existence of pregnancy does not produce symptoms differing in any essential way from those occurring in non-puerperal cases. The presence of pregnancy, therefore, does not entitle osteomalacia to be regarded as a separate clinical entity. (2) The existing differentiation of early rickets, late rickets, and osteomalacia, according to age incidence, does not appear to be justifiable. The evidence points to the conclusion that these conditions are identical and represent rickets at different ages. (3) The primary causal factor of early rickets, late rickets, and osteomalacia is environmental. While lack of sunlight may be regarded as an important factor, life in purdah, which entails a diminution in muscular activity, is of predominating importance. (4) Pregnancy is of subsidiary importance in the causation of osteomalacia.

112. Intraperitoneal Blood Transfusion in Infantile Anaemia.

H. OPITZ (*Klin. Woch.*, April 29th, 1924, p. 784) points out that transfusion of large quantities of blood, though a rapid method of treatment in cases of severe infantile anaemia, is often difficult to carry out, especially when required frequently. By intraperitoneal blood transfusion a steady supply of small numbers of red blood corpuscles is brought about. It has been shown by many observers that red blood corpuscles can be absorbed from the peritoneal cavity. Opitz and Metis have shown by numerous experiments on dogs and rabbits that red blood corpuscles are rapidly absorbed, as shown by the enumeration of the red corpuscles in the circulating blood; and that adhesions do not occur, as proved by laparotomy and *post-mortem* examination subsequently. After these experiments on animals intraperitoneal blood transfusion was employed in cases of anaemia in children. The author has employed this method in 100 cases with aseptic precautions, and no bad results have followed. Details of two cases of infantile anaemia are recorded, showing the prompt increase of the red corpuscles of the blood after the intraperitoneal injections of defibrinated blood (170 c.cm. and 150 c.cm. respectively). Precautions desirable when intravenous transfusions are employed (preliminary agglutination and haemolysis tests, etc.) are also necessary when intraperitoneal transfusions are carried out. Defibrinated blood is recommended for the transfusion.

113. Combined Syphilis and Chancroid.

L. PÉRIN (*Paris méd.*, March 1st, 1924, p. 202) recalls that the term "mixed chancre" was introduced by Rollet in 1858 to denote the coexistence of hard chancre and chancroid in the same ulcer. In 1920 Milian showed that soft chancre might also be associated with syphilis in the secondary or tertiary stage, or in the inherited disease, and that these hybrid forms were curable by antisyphilitic treatment. The following varieties of the symbiosis of syphilis and chancroid may be defined: (1) Primary mixed chancre. (2) Secondary or secundo-tertiary mixed chancre, including (*a*) papular soft chancre (Milian), (*b*) secondary chancroid changes in syphilitic lesions. (3) Tertiary mixed chancre, including (*a*) tertiary ulcerative chancre, (*b*) mixed phagedaenic ulcerative chancre. In primary mixed chancre there is a direct inoculation of *Treponema pallidum* and Ducrey's bacillus in the same spot. The inoculation occurs simultaneously, or the two organisms may be inoculated one after the other. As a rule the subject has been hitherto free from syphilis. For a long time primary mixed chancre was regarded as rare, its frequency being estimated from 2 per cent. (Puche and Fournier) to 6 per cent. (Rollet). At present it appears to be much commoner than is generally supposed, its frequency having increased considerably during the war and since. It is seen in both sexes and in all grades of society. It may be situated in all parts of the body, but an extragenital site is rare. In men it has a predilection for the region of the frenum. It is seldom present on the meatus or glans, but is found more often in the balano-preputial groove and skin of the penis or scrotum. In women it is situated on the labia majora, nymphae, entrance of the vagina, anus, and occasionally the cervix. In secondary, secundo-tertiary, or tertiary mixed chancre syphilitic changes take place in the soft chancre in a manner similar to what is seen in injuries or wounds in a syphilitic subject. Treatment of mixed chancre includes treatment both of syphilis and of chancroid. In primary mixed chancre the treatment should be begun as soon as possible, but not until an absolutely certain diagnosis has been made by finding *Treponema pallidum*, a positive Wassermann reaction, or the development of secondary symptoms. Intravenous injections of arsenobenzol should then be given without delay. In mixed secondary or secundo-tertiary chancre arsenobenzol may also be used, but it is advisable at the onset to substitute mercury salts, especially the cyanide in intravenous injections. Bismuth salts and potassium iodide are also indicated. As regards the treatment of chancroid, no cauterization should be employed since it is likely to produce artificial induration, and no method should be used which would interfere with examination for treponemata. Local applications such as iodoform powder or boracic baths are best, but should be stopped three days before ultra-microscopic examination. In secondary or secundo-tertiary chancre zinc chloride, hot air, or iodoform powder may be employed. In cases of phagedaenic chancre local hydrogen peroxide or potassium permanganate baths for an hour or more are required.

114. Relief of Severe Hiccup.

T. HISHIKAWA (*Schweiz. med. Woch.*, April 10th, 1924, p. 352) finds that the problem of relieving hiccup has recently been accentuated by the wave of epidemic encephalitis which often manifests itself in attacks of intractable hiccup. With regard to the devices already in common use, he refers in particular to two which, though certainly effective, are either disagreeable or technically difficult. Thus, introducing a tube into the stomach and leaving it there for some minutes may be very effective, but is also very unpleasant. The other device requires the co-operation of a second person, and it consists of pressing the thumbs under the costal arches and pushing them outwards so as to induce passive distension of the diaphragm and thus check its clonic contractions. The devices recommended by the author aim at cutting short these clonic contractions by a perfectly simple reflex mechanism. The first consists in provoking the sneezing reflex by tickling the mucous membrane of the nose with a small feather or a thin strip of paper; the second aims at inducing the vomiting reflex by introducing a finger or some other object into the throat. Both devices throw the expiratory muscles of the abdominal wall violently into action and cause forcible stretching of the diaphragm.

115. Cardio-respiratory Synchronism.

G. GALLI (*Arch. des Mal. du Coeur des Vaisseaux et du Sang*, April, 1924, p. 208) has observed that, in cases of heart disease after a test of exercise tolerance, a definite synchronism is often established between the cardiac and respiratory movements. The phenomenon may last for only a few seconds or be prolonged for some minutes or hours. Frugoni has recorded the case of a young man suffering from aortic and mitral regurgitation, who had periodic anginal attacks of the abdominal type during which the respiration rate was accelerated to that of the pulse. The attack lasted three days without remission. The patient was neurasthenic, concentrating his attention on his heart and pulse. Frugoni was able to exclude organic cerebral disease, and regarded the synchronism as psychic. Zeri has recorded a synchronism of equal pulse and respiratory rates in a case of Stokes-Adams syndrome, but in that case the auricle contracted three times as often as the ventricle. Galli reports another case, in a man aged 35, with a doubtful history of syphilis. The synchronism persisted in spite of intravenous injections of atropine and inhalations of amyl nitrite, but disappeared after a full course of antisyphilitic treatment; the lesion was probably bulbar. Galli discusses the physiology of the bulbar respiratory centre, and concludes that (1) cardio-respiratory synchronism is very frequent in heart disease; (2) that synchronism is often brief and may escape attention, though sometimes it may persist for some hours; (3) the synchronism depends on a functional association between the respiratory and cardiac centres; the latter is usually the dominating factor and determines the ratio and duration of the synchronism, but occasionally the reverse is observed. The synchronism corresponds to a functional compensation and a lessening of the myocardial effort. Its appearance or disappearance is of value in diagnosis, prognosis, and treatment.

116. Fenugreek as a Substitute for Cod-liver Oil.

P. BLUM (*Bull. Soc. de Thér.*, April 9th, 1924, p. 135), who records twenty-six illustrative cases, states that fenugreek (*Trigonella foenum graecum*), which has been used since remote antiquity, can be employed as a substitute for cod-liver oil in every case in which the latter is indicated, such as lymphatism, scrofula, rickets, anaemia, and debility following infectious diseases or neurasthenia, as well as in gout and diabetes, in which it may be combined with insulin. It possesses the great advantage of being cheap and being readily taken by children, in spite of its bitter taste, which can easily be disguised. Its chemical composition resembles that of cod-liver oil, owing to its containing substances rich in phosphates, lecithin, and nucleo-albumin. It also contains considerable quantities of iron in an organic form, which enables it to be readily absorbed. Reutter has noted the presence of several alkaloids in fenugreek, such as methylamine, dimethylamine, and trimethylamine, as well as eholin, neurin, and betain, which are derived from the splitting up of lecithins. Like the alkaloids in cod-liver oil, these substances stimulate the appetite by their action on the nervous system, or produce a diuretic or ureo-poietic effect. The drug is given in the form of powder in doses of two teaspoonfuls daily in broth, milk, or jam.

Surgery.

117. Intrathoracic Suppuration.

T. G. MOORHEAD (*Irish Journ. Med. Science*, July, 1924, p. 293), dealing with the diagnosis and treatment of various intrathoracic suppurative conditions, urges that the aphorism that "all cases of unresolved pneumonia are cases of undiagnosed empyemata" should be universally taught, since, although stated in too general terms, it contains much truth, and failure to appreciate its significance is often followed by tragic results. He points out that a diagnostic difficulty may exist in the case of extensive abscess owing to the physical signs being ambiguous. The level of dullness may be oblique owing to the limitation of pus by adhesions, and also loud tubular breathing, often amphoric in character, may be heard, and so obscure the presence of fluid in the pleural cavity. In all doubtful cases, and particularly when persistent pyrexia has followed pneumonia, a needle should be introduced whether physical signs suggest unresolved consolidation or not. In an experience of hundreds of cases he has never seen harm result from this procedure. In the second type of post-pneumonic empyema, with a small collection of pus either between the base of the lung and the diaphragm or interlobar, he finds that diagnosis is sometimes helped by observing that the edge of the spleen is palpable owing to the pushing down of that organ, or that on the other side there is a similar depression of the liver dullness. He recommends that any pus removed by the needle should be kept for the inspection of the surgeon, in order that there may be evidence of the existence of suppuration; it had sometimes been difficult at the operation to find the abscess at once, and the suggestion of a mistaken diagnosis had thus arisen. Moorhead draws attention to the existence of an "acute chest" comparable with the "acute abdomen," and describes a case which occurred during the influenza epidemic in 1921. Should a discharging sinus persist after operation and the lung fail to expand, he urges strongly that sterilization of the cavity by Dakin's or some similar solution, followed by the introduction of bismuth paste and a closing of the sinus, should be adopted.

118. Submucous Fissure of the Palate.

M. SEEMAN (*Arch. Internat. de Laryngol., Otol. et Rhinol.*, April 24th, 1924, p. 383) mentions three types of abnormality of the palate—complete absence, fissure with divided mucosa, and fissure without division of the mucosa—but deals only with the latter type. The condition is brought to notice by nasal intonation in a child, and this is often the only sign of the abnormality. Careful examination shows a small triangular depression in the mid-line at the junction of the hard and soft palates, with its apex forwards. Digital examination at this point reveals a defect in the bone about 7 to 10 mm. long and 3 to 5 mm. broad at the base. On phonation the soft palate does not efficiently close the naso-pharyngeal passage. The author mentions that the amount of occlusion required to produce the different vowel sounds varies, and the degrees required may be shown by placing behind the soft palate tubes of different calibre or by connecting the nares with a tambour and registering the pressure. By these means it is shown that the approximation of the soft palate to the posterior wall of the pharynx increases successively in the pronunciation of the vowels *a*, *o*, *e*, *u*, till finally in the case of the vowel *i* the closure is complete. The causes of the submucous and other fissures of the palate are difficult to determine. Various authors have suggested hereditary deformity, outside forces acting on the foetus, inflammatory and mechanical changes, and a condition of hydrocephalus separating the palate bones. Others have thought that a large pad of adenoids prevents the approximation of the palatal processes, and one author considered syphilis to be the cause, but this has not been confirmed. Seeman thinks that the explanation must be found in a developmental error. The two maxillo-palatal processes should unite about the ninth week and the soft palate close a little later. Ossification in membrane begins in the third month, and the development of the face and palate continues until the fifteenth year or so. The submucous fissure is always found at the posterior end of the hard palate in the median suture line, and in this and other types of palatal fissure the postero-inferior part of the vomer is undeveloped. The vomer usually lies with a broad base on the median suture line in the child, and as the palatal crest is formed it is raised up by that process. The action of the vomer tends to keep the palatal processes in the horizontal plane against the action of the tongue, which tends to force them into the vertical. In certain ruminants the vomer does not normally reach to the posterior end of the hard palate, and the author suggests that the condition described is a lack of development retrogressing to this ruminant type, and that the deficiency of the palate is a secondary stage of this vomerine fault. Treatment of this condition includes voice training and massage of the soft palate. Great care should be taken when removing adenoid vegetations, as the deficient closing of the naso pharynx may be accentuated by their removal.

119. Acute Appendicitis in Childhood.

F. BEEKMAN (*Annals of Surgery*, April, 1924, p. 538), in analysing the results of 145 cases of acute appendicitis in childhood, states that in 113 cases the rectus splitting incision was used and in 32 the McBurney incision was employed. The appendix was usually removed with the cautery, and the stump inverted into the caecum. Drainage was usually employed, and blood transfusion was found very beneficial in long-drawn-out cases of sepsis. Eleven patients died, and with the exception of children under 5 years of age, in whom it is extremely high, the mortality is about the same as among young adults. It occurs more commonly in boys, but the mortality is twice as high in girls as boys. Incisional hernia follows operation in children more often than in adults. Sloughing of muscles and aponeurosis, secondary abscess, and partial evisceration of portions of the abdominal contents appear to be the causative factors. There were sixteen incisional herniae in the series, and all the cases had been drained; eleven of these have subsequently been cured by operation. The earlier the diagnosis is made and operation performed, the lower is the mortality and the fewer the complications. In the very young the disease is comparatively rare and its frequency increases up to adolescence. The onset in childhood is usually abrupt, with acute abdominal pain and vomiting. The temperature is usually under 103° F. Some mistakes in diagnosis would seem to be inevitable, but it appears better to err by operating when in doubt.

120. Acute Pancreatitis.

R. VOGEL (*Deut. Zeit. f. Chir.*, April, 1924, p. 71) records his observations on 55 cases of acute fat necrosis of the pancreas which were operated on at St. George's Hospital, Hamburg, between 1910 and 1923. His conclusions are as follows: (1) There is a close connexion between the diet and state of nutrition on the one hand and the origin of acute pancreatitis on the other. Most of the patients are obese, and in the years in which a deficiency of fat in the food occurred there was a decided fall in the incidence of the disease, no cases having been admitted during the years 1918 and 1919. (2) Erroneous diagnoses are frequent, acute pancreatitis being most frequently mistaken for perforated gastric ulcer and intestinal obstruction. (3) There is a close connexion between cholelithiasis and acute fat necrosis. Among 55 cases there was a history of gall stones in 13, in 16 jaundice was present on admission to hospital, in 15 stones were found in the gall bladder, in 9 in the ducts as well, in 2 in Vater's papilla, and in 5 there was a single channel for the common bile duct and pancreatic duct. Other factors in the production of acute pancreatitis are trauma, sublimate poisoning, mumps, alcoholism, and pregnancy. (4) Acute pancreatitis commences with oedematous swelling of the gland and surrounding tissues, followed by exudation and necrosis. The process is at first degenerative and later infection supervenes. The exudation is at first serous, but afterwards becomes purulent and sanious. Spontaneous recovery may take place by encapsulation and the formation of adhesions when the infective process is not too violent. (5) The mortality in the cases

operated on was 59 per cent. The complications following the operation were fistula of long duration, diabetes, and impaired function of the pancreas, manifested by diarrhoea or constipation. (6) The necropsy findings were haemorrhagic infarction and necrosis of the pancreas with fatty infiltration, fatty liver, thrombosis and thrombo-phlebitis of the portal vein and its tributaries, and liver infarcts. R. BRINGMANN (Ibid., May, 1924, p. 211) emphasizes the diagnostic value of examination of the blood in doubtful cases of acute pancreatitis. The most important blood changes which are due to toxic peritonitis are a moderately high leucocytosis which may amount to 30,000 at the onset, a high neutrophil percentage with well marked or hyper-regenerative displacement of the nucleus, and a very low lymphocyte count.

Diseases of Children.

121. Hydrocele in the Infant and Hereditary Syphilis.

P. VALLERY-RADOT and G. SALÈS (*Paris méd.*, May 24th, 1924, p. 485) describe the following three forms of hydrocele in children: (1) Hydrocele in the newborn. This appears in perfectly healthy children without any syphilitic taint and is associated with swelling of the mammary gland, secretion of milk, and the appearance of lanugo and naso-facial milium. The hydrocele in this form is bilateral, irreducible, of small size, and of short duration, subsiding without causing any morbid change in the testis. (2) Congenital hydrocele, due to congenital malformation of the peritoneo-vaginal canal, which may persist in its entirety or be partially obliterated, forming encysted hydrocele. These congenital hydroceles have often little tendency to spontaneous cure. If they increase in size and persist beyond the first year, operation is required. They have no connexion with syphilis. (3) Persistent unilateral and irreducible hydrocele. This form is strongly suggestive of congenital syphilis, being frequently associated with enlargement of the spleen, craniotabes, dilatation of the cranial veins, and other signs of the disease. The Wassermann reaction in the blood or hydrocele fluid is not of much diagnostic value, as it is frequently negative in undoubted congenital syphilis in early life. In the mother the reaction is often positive. Whether treated or not, the hydrocele finally becomes absorbed. It is of no gravity in itself, but the prognosis depends on the syphilitic disease of which it is a manifestation. Antisyphilitic treatment is necessary, not to hasten the absorption of the effusion, but in order to control the generalized infection.

122. Pyrexia in Infants.

IN afebrile newborn infants the protein concentration of the blood serum is fairly constant (6 to 7 per cent.); in the newborn with fever the serum proteins are usually above 7.5 per cent. and often above 9 per cent., indicating dehydration. H. BAKWIN, R. M. MORRIS, and J. D. SOUTHWORTH (*Amer. Journ. Dis. Child.*, June, 1924, p. 578) studied the effects of giving fluid in this condition; 35 c.cm. of fluid per kilogram of body weight, warmed above the temperature of the baby, were given and the temperature and blood concentration determined repeatedly before and after. The fluid was given (1) by gavage, (2) hypodermically, (3) intraperitoneally. The fluids used were tap water, saline, and 5 per cent. glucose solution, and the babies were kept well covered during the experiment. The red cell concentration was also studied. As controls, infants of 2 to 15 months, with fever due to various infections, were used. The results showed that by gavage there was a prompt fall in temperature and blood concentration to normal in an hour where water or glucose was employed; saline solution caused a tendency to diarrhoea and was discontinued. With hypodermic and intraperitoneal injections the effect was less prompt, less marked, and less regular than by gavage. The controls showed only a slight fall in temperature. In their comment the authors consider the parallelism between the effect of fluid on the blood concentration and on the temperature as evidence that the fever is due to dehydration; and they point out the greater efficacy of the oral route over other routes. In the adult this route is second only to blood transfusion. Similar results were obtained in a group of infants dehydrated by severe diarrhoea.

123. The "Intoxication" Syndrome in Infants.

C. ROSENBAUM (*Monats. f. Kinderheilk.*, July, 1924, p. 289) investigates this condition in 88 infants—coma, spasm, and hyperpnoea being taken as signs of "intoxication." The syndrome is always a result of great loss of fluid from the body at a certain rate of loss. Toxic symptoms arising in a case of infectious disease are due to desiccation, and all "intoxicated" infants show a "thickening" of the blood. This is proved by estimation of (1) the water content, which is usually, but not always, correlated with the toxic syndrome; (2) the serum protein concentration, which is increased in "toxic" infants; in three cases as the child recovered high values decreased to normal; (3) the red cell count, which was usually increased, though a correspondence between the cell increase and the increase of serum protein content was lacking in 10 cases out of 16; (4) the serum viscosity and specific gravity, which were both definitely increased, especially the former. This "thickening" is noticeable whether the comparison be made with healthy infants of the same age or with the patients after restoration to health. Similar blood concentration may occur in infants under other conditions without any signs of "intoxication." Examinations of the solid organs showed that the water content of the brain is increased after administration of large quantities of fluid, while in untreated cases normal or considerably decreased values are found. The kidneys are unaffected. Severe dehydration may cause fatty degeneration of the liver and so determine a disturbance of metabolism, but cases of dyspepsia without toxic symptoms may show a similar fatty change. Administration of fluid (isotonic saline or gum solution) intravenously is of little service; still more ineffectual is the intraperitoneal route (saline or 5 per cent. dextrose in saline). Tea, in small quantities, given orally, produces the best results. For the vomiting, sodium luminal, given intramuscularly, is recommended. Some infants who have been entirely freed by treatment from toxicity die suddenly.

Obstetrics and Gynaecology.

124. Volvulus of the Fallopian Tube.

J. J. WELLS (*Journ. Amer. Med. Assoc.*, July 5th, 1924, p. 30) reports a case of volvulus of the Fallopian tube occurring in an unmarried woman, aged 32, with tuberculous pyosalpinx. The onset was sudden: the patient, who was in apparently good health, while on her way to business was seized with severe pain in the lower part of the abdomen on both sides, particularly on the left, and vomited frequently during the next few hours. Later the pains decreased, the temperature, pulse, and respirations were normal, but there was slight tenderness in the left and lower part of the abdomen, and also on deep palpation of McBurney's area. There was no history of menstrual abnormality, and the patient was menstruating during the first day of the attack. All symptoms disappeared during the next day; the patient got up, and then a second attack of cramp and vomiting occurred, with a rise of temperature to 102.2° F., and the pulse rate to 120. There was no change in the abdomen, and a tentative diagnosis of subacute appendicitis was made. The abdomen was opened, and the appendix was found to be normal. On examination of the uterine appendages there appeared to be a gonorrheal pyosalpinx on the right side, and on the left there was volvulus of the left Fallopian tube, the torsion being from left to right, with three and a half complete turns; both ovaries were normal. The pyosalpinx proved subsequently to be of a tuberculous nature. Wells discusses the subject of volvulus generally, pointing out its extreme rarity, and suggests that a long, loose mesosalpinx seems to be one of the main predisposing factors. The condition has never been diagnosed before operation.

125. Ovarian Pregnancy.

P. MOULONGUET-DOLÉRIS (*La Gynécologie*, May, 1924, p. 257) remarks that no recorded case of ovarian pregnancy can be regarded as authentic in the absence of microscopical examination, and he publishes brief abstracts of the 77 cases which he has found described in the literature. Early ovarian pregnancy suggests to the naked eye a haematoma of the ovary, and requires microscopical demonstration of the embryonic nature of the tumour; in late ovarian pregnancy there is an obvious foetus, but the situation of the ovum within the ovary is very difficult to prove microscopically. In the first case diagnosis depends on detection of chorionic villi; in the second, Spiegelberg's postulates should be fulfilled—the foetal sac, with attached utero-ovarian ligament, should be in the place of the ovary, the tube should be normal, and ovarian tissue should be histologically demonstrable in the foetal sac wall. Rupture with peritoneal bleeding is the most common fate of ovarian pregnancy, and occurs as a rule earlier than in a tubal gestation—so early that a clinical history of amenorrhoea is rarely obtained; usually the patient when seized with acute abdominal pain is unaware of pregnancy and expects to menstruate within a few days. Exceptionally the ovum is destroyed by periovular haemorrhage which does not pass the bounds of the ovarian tissue; the true character of the lesion is only noted at a later operation for chronic pelvic inflammation. In recent years only one authentic case has been recorded of survival of an ovarian pregnancy to term.

123. Chronic Cervicitis.

H. H. SCHLINK (*Med. Journ. of Australia*, June 7th, 1924, p. 560) discusses the indications for endocervical enucleation in chronic diseases of the cervix, and describes his instrument for performing the operation. By endocervical enucleation leucorrhoea may be cured and the chances of conception improved, while the operation does not interfere with normal dilatation during subsequent labour. Chronic cervical gonorrhoea and carrier cases can be eliminated by its performance, and, by relieving focal infection, the posterior parametritis in the utero-sacral ligaments can be cured, with the relief of backache and dyspareunia. Following subtotal hysterectomy for fibroids, or inflammatory diseases of the appendages, it is useful in preventing the occurrence of post-operative leucorrhoea and the possibility of later cancer, and, when undertaken after or before removal of the tubes for gonorrhoeal salpingitis, the patient is more rapidly cured of infection than if an infected cervix were left. With the author's instrument endocervical enucleation can be accomplished with saving of time and a completeness which removes a scientifically measured section of tissue containing the entire gland-bearing area of the cervix.

127. Double Mammary Cancer after Chronic Irritation.

R. B. MCGRAW and R. SCHRANKEL (*Journ. Amer. Med. Assoc.*, June 21st, 1924, p. 2028) report a case in which carcinoma of both breasts developed in an unmarried woman, aged 41. The patient stated that at the age of 8 the left leg had been amputated at the middle of the thigh following an injury, and from this date she had used a crutch on the left side. At the age of 23, after an operation for fractured right patella, she commenced to use two crutches and continued to do so, walking with them held closely to the body so that the breasts were compressed towards the mid-line. Three months before admission to hospital the patient noticed that both breasts were growing smaller, the left more rapidly than the right, and that there was a small hard lump in the upper and inner quadrant of the right breast. On examination a stony hard mass was detected in the right breast, the nipple was retracted, but there was no discharge. In the lower and inner quadrant of the left breast there was a large mass; the surface of the mass was ulcerated, and the ulcer involved the nipple, which was retracted. The diagnosis of carcinoma was confirmed by pathological examination. The authors point out the interest of the case from the standpoint of the history of long-continued irritation by crutches, used on one side for thirty-five years and on the other for twenty years.

Pathology.

128. The Welch-Fraenkel Bacillus and Gastro-enteritis in Infancy.

G. JÖRGENSEN (*Ugeskrift for Laeger*, June 5th, 1924, p. 449) has carried out bacteriological examinations of the stools of infants, some of whom were suffering from gastro-enteritis. The stools were obtained by placing sterile hydrophile cotton-wool between the anus and the napkin, and were examined by direct staining methods and by a special cultural technique designed to favour the growth of the Welch-Fraenkel bacillus. Zeissler's methods were adopted to this end, and the cultures were injected subcutaneously into guinea-pigs to see whether gas phlegmon could be induced. The stools of 30 infants not suffering from gastro-enteritis, but convalescing from diseases such as bronchitis and pneumonia, were thus examined, but in no case was the Welch-Fraenkel bacillus found. This observation does not agree with those of earlier investigators, and the author suggests that this discrepancy may arise from the inadequacy of the technique of his predecessors. He also examined the stools of 14 infants showing signs of gastro-enteritis, which in 8 cases was acute primary gastro-enteritis; in 6 of these cases he found the Welch-Fraenkel bacillus. He did not find it once in the remaining 6 cases, in which the gastro-enteritis was secondary to some other disease. He concludes that the Welch-Fraenkel bacillus may play an important part in the gastro-enteritis of infancy, and that the beneficial effect of withholding sugar from the baby's food may be traced to depriving the Welch-Fraenkel bacillus of a much-needed culture medium.

129. Filtrable Forms of Tubercle Bacilli.

J. VALTIS records some experiments (*Ann. de l'Inst. Pasteur*, June, 1924, p. 453) which show that under certain conditions the tubercle bacillus is able to traverse a Chamberland filter, and to give rise to disease in guinea-pigs. Pus and sputum were used; they were autolysed for three days in the incubator and were then centrifuged. The deposit was examined for tubercle bacilli and was then mixed again with the supernatant fluid; two animals being injected subcutaneously with this to serve as controls. The remaining fluid was then diluted with saline, filtered first through a paper covered with kieselguhr, and then through a Chamberland L_2 candle. Sterility tests were made of the filtrate, including cultures on various egg media suitable to the growth of tubercle bacilli, and 5 or 10 c.cm. of the filtrate were then injected subcutaneously into guinea-pigs. The results of the various injections were so similar that they may be summarized together. The local glands swelled slightly during the week or so following, and then went down again; the animals showed no other sign of disease, except a loss in weight. Death occurred in many of the cases in from two to four months. At autopsy there was a slight increase in size of the local glands, tumefaction of the tracheo-bronchial glands, and small areas of hepatization in the lungs containing tubercle bacilli. No other lesions were seen, not even local ones at the site of inoculation. The same results were obtained with filtrates of glycerin broth cultures three to eight weeks old. In no case did any organisms grow out on the media put up from the filtrates, and in all cases the guinea-pigs inoculated with the unfiltered emulsion developed generalized tuberculosis. Valtis maintains, therefore, that certain forms of tubercle bacilli are capable of passing a filter and of giving rise to lesions in the bronchial glands and lungs containing tubercle bacilli. Material from these lesions on inoculation into fresh animals gives rise in them to a similar type of disease.

130. Phagocytosis in Bismuth Therapy.

R. SAZERAC and R. VAURS (*C. R. Soc. de Biologie*, July 18th, 1924, p. 430), as the result of experimental work, have come to the conclusion that phagocytosis plays an important part in the action of the insoluble bismuth compounds on spirochaetes and trypanosomes. They suggest that this phagocytosis is similar to the action of phagocytes in combating parasites: the bismuth is absorbed into the cell substance and is there transformed into a soluble product. Their experimental work was performed on guinea-pigs, rats, and rabbits. They found that an aqueous suspension of bismuth, when injected into the peritoneum of a guinea-pig, resulted in an active absorption of the metallic particles by the phagocytic cells. These cells, which number normally in the peritoneal fluid about 10,000 per cubic millimetre, increased rapidly after the injection, reaching 150,000 to 250,000 per cubic millimetre two to three days later. At first the cells were full of the characteristic bismuth particles, but at the end of eight to ten days these had disappeared and the cell content returned to the normal; similar phenomena were observed in the rat and the rabbit. In the case of rats infected with *Trypanosoma brucei*, which in untreated animals is always fatal in four or five days, it was found that the injection of metallic bismuth removed the parasites from the peripheral circulation in from one to two days. A reappearance of the trypanosomes in four to ten days was successfully treated by a second injection of bismuth, and cure followed. Similar results were obtained in treating spirochaetosis in the rabbit. These results, the authors believe, are brought about by the phagocytic cells conveying the bismuth throughout the body and transforming it into a soluble product which is able to destroy trypanosomes and spirochaetes.

131. Lymphatic Reaction in an Acute Infection.

F. J. L. WOLTRING and J. F. HULK (*Nederl. Tijdschr. v. Geneesk.*, May 24th, 1924, p. 2344), who record an illustrative case, remark that when an increase in the number of leucocytes occurs in an acute infection, the polymorphonuclears are almost always principally affected, and that it is very unusual for a lymphocytosis to occur. In such cases anxiety may be felt because the blood picture suggests acute lymphatic leukaemia, of which the prognosis is very unfavourable. The benign course of the disease, however, excludes the possibility of acute lymphatic leukaemia, and the diagnosis of a lymphatic reaction is substituted. Several examples of this kind have been reported, including four by Dutch writers—namely, Bruining, Lankhout, Snapper-Rijkens, and Terwen. According to Bruining, this peculiar reaction of the lymphatic system is due to the infective or toxic agent having a strong affinity for the lymphoid tissue, on which it acts as an irritant. The present authors' patient was a lad, aged 19, admitted to hospital with signs of acute bronchitis. The examination of the blood showed that the lymphocytes were 93 per cent., the polymorphonuclear neutrophils 6 per cent., and the eosinophils 1 per cent. The temperature was subfebrile. The cervical, occipital, axillary, and inguinal glands, as well as the spleen, were enlarged. The blood picture suggested acute lymphatic leukaemia, although this diagnosis did not correspond with the patient's satisfactory general condition. The enlargement of the lymphatic glands and spleen also suggested tuberculosis, but this was excluded by the subsequent course of the disease, which ended in complete recovery, with a return of the blood picture to normal.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

132. Serum Therapy in Tuberculosis.

ANDRÉ JOUSSET (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 26th, 1924, p. 923) attributes the frequent failure of serum therapy in tuberculosis to its indiscriminate use in every stage of the disease. The limitations of serum therapy are very definite, and cases must be selected with care, since the treatment is useless in chronic cases with caseation, extensive fibrosis, and cavitation. Many regard serum therapy as a last resort, whereas it is actually the treatment to be employed as soon as the diagnosis of early tuberculosis has been made. When employed in chronic cases actual harm may result, since these patients are very susceptible to ill effects following the injection of serum; only recent cases of acute or subacute type should be selected for serum treatment. Fever is an indication for treatment, but its type should be carefully studied. In recent cases the chart shows regular oscillations which never exceed a range of 4° F. in adults and 5° in children. In chronic cases the fever becomes remittent or intermittent—a more or less pronounced "hectic" type; sometimes the curve is quite irregular. This is a certain indication of caseation, and definitely contra-indicates serum therapy. Serum therapy is specially indicated in all forms of tuberculosis in children; such cases often yield the best results. Jousset gives charts and clinical details of 15 illustrative cases; in some patients the temperature fell to normal after one injection of serum, and they made a speedy recovery; but in others slow recovery followed repeated injections, especially in cases with extensive consolidation and gross lesions. Haemoptysis does not contra-indicate the use of serum; remarkable results have followed its use when other measures have failed. Jousset's eighth case was that of a young woman who had a severe and prolonged haemoptysis for the fourth time. She was very anaemic, and haemoptysis and fever had persisted for three weeks, but a single injection of 100 c.cm. of serum arrested the haemoptysis and rendered her afebrile. Jousset's conclusions are as follows: initial febrile tuberculosis, tuberculous polyserositis, and consolidated pulmonary foci do well under serum treatment. Simple "plastic" tuberculous lesions exhibit irregular and transient improvement. Cases of advanced "necrosing" tuberculosis do badly and may be actually aggravated by serum therapy.

133. Lumbar Puncture for Asthma.

W. SCHULTZ (*Deut. med. Woch.*, May 2nd, 1924, p. 576) has found lumbar puncture relieve for a considerable time not only the symptoms of ordinary asthma but also those of uraemia and the pre-uraemic state. One of his asthmatic patients was a widow, aged 34, whose symptoms had proved refractory to the usual remedies. The withdrawal of a single cubic centimetre of cerebro-spinal fluid was followed by headache, nausea, and vomiting which lasted for a couple of days. After the third day she was much better, and she was free from her attacks of asthma for about three months. In some cases the author has found this treatment unsuccessful, and he is inclined to reserve it for those cases which have proved refractory to less drastic remedies. In a case of chronic glomerular nephritis with fits and asthmatic attacks, which occurred at night and were very distressing, he scored a great success by removing some of the cerebro-spinal fluid which was under considerable pressure. In another case, in which the final stage of uraemia was marked by tracheal râles, this symptom was banished for at least twenty-four hours by lumbar puncture.

134. Dental Infection in Chronic Gastro-intestinal Disorders.

G. R. SALTERLEE (*Med. Journ. and Record*, May 21st, 1924, p. 481), discussing the effects on chronic gastro-intestinal disorders of removing dental infection, points out that abdominal operations for ulcer, appendicitis, cholelithiasis, peritoneal and pelvic conditions, are often disappointing in cases where oral sepsis has received no treatment, while good results occur in similar cases in which all foci of infection, oral or otherwise, have been removed prior to operation. He adds further that in a large number of patients presenting classical symptoms of these diseases such symptoms have subsided after removal of all obvious foci of infection. To what extent oral sepsis may be the primary factor in the causation of serious abdominal trouble is unknown; in only a few of the cases considered were infected teeth the sole findings, and their extraction the cause of improvement, so that all cases of chronic intestinal invalidism require thorough investigation of every possible source of focal infection. In sinus infections a primary tonsillectomy, followed by removal of teeth, should be performed prior to operative drainage or direct treatment of the sinuses. From a study of 72 cases it was found difficult to classify them according to diagnosis, since a lesion in one part may be succeeded or accompanied by another elsewhere, and the symptoms of the nervous system may predominate when the chief lesion is gastro-intestinal. Treatment aims at the gradual removal of all foci, with medical and vaccine therapy, and in even apparently hopeless instances of arthritis, neurasthenia, hemicrania, and cardio-renal mischief marked improvement followed removal of foci. Oral infection, even if not the primary, is the most frequent and important source of trouble, and complete surgical eradication of minor foci should precede abdominal operation when possible. All foci should be removed as soon as discovered in order to prevent the occurrence of permanent lesions elsewhere.

135. Swine Erysipelas in Man.

K. EDEL (*Nederl. Tijdschr. v. Geneesk.*, February 2nd, 1924, p. 452) of Haarlem states that, in contrast with Dutch literature, a large number of cases have been reported by foreign writers of infection in man by *Bacillus rhusiopathiae suis*, the organism of swine erysipelas. It would be a mistake, however, to suppose that the disease is less frequent in Holland than elsewhere, as many medical practitioners are unfamiliar with the condition. In most cases, but not in all, swine erysipelas runs a mild course in the human subject. Three fatal cases have been recorded by Günther and one by Praus-nitz. At the autopsy in a fatal case in a butcher ulcerative endocarditis was present, which is a frequent finding in the disease in swine. A wound infection, which for a long time was regarded as an independent infection—namely, Rosenbach's erysipeloid—is probably identical with swine erysipelas. The cause of the infection is almost always inoculation with some animal material, such as a scratch from a fish-bone or a wound while killing a sheep or a fowl, and not necessarily a pig. The symptoms are the same as in infection with the virus of swine erysipelas—namely, a slowly advancing erythema with a livid discoloration in the centre, occasionally some desquamation and tenderness, but without any constitutional disturbance. The same minimal quantities of a broth culture of the virus of erysipeloid and of *B. rhusiopathiae suis* are fatal for a mouse, while a fraction of 1 c.cm. of swine erysipelas antiserum protects mice not only against a fatal dose of a swine erysipelas bacillus culture, but also against the virus of erysipeloid. Moreover, if a swine is infected with the virus of erysipeloid, it shows a few days later typical symptoms of swine erysipelas, which disappear after injection of anti-swine erysipelas serum. Erysipeloid and swine erysipelas may therefore be regarded as clinically, therapeutically, and epidemiologically identical. The dose of the anti-swine erysipelas antiserum for the adult is 10 to 15 c.cm., after injection of which the symptoms of pain, redness, and swelling rapidly subside in both diseases.

136. Rectal Digitalis Therapy.

R. L. LEVY (*Arch. Intern. Med.* (U.S.A.), June 15th, 1924, p. 742) records the results of the administration of digitalis by rectum in 19 cases of auricular fibrillation and one case of auricular tachycardia (ectopic). It was also given in 12 surgical cases following operation. The preparation employed was an aqueous solution of a purified extract of digitalis leaves: 1 c.cm. contained the equivalent of 0.1 gram of powdered leaf. The amounts given ranged from 8 to 20 c.cm. With one exception the total dose was administered at one time. A good therapeutic effect was apparent in every instance, and in many cases the results were very rapid and beneficial; the usual effects of digitalis being observed. The average time for the initial effect was two hours thirty-five minutes, for a maximal effect nine and a half hours. Digitalis given by the rectum is taken into the venous circulation, for the most part through the mesenteric and portal systems, and not by way of the inferior vena cava. Rectal digitalis therapy is intended to supplement, not to supplant, the oral method of administration. It is useful when the patient suffers from nausea and vomiting, or after surgical operations when digitalis cannot be given by the mouth. The dose is comparable to that employed when a large single dose is given by the mouth.

Surgery.

137. The Diagnosis of Peritoneal Carcinoma.

R. S. BOLES (*Journ. Amer. Med. Assoc.*, June 28th, 1924, p. 2112), dealing with the difficult problem of the differential diagnosis of tuberculous peritonitis from disseminated peritoneal carcinoma, points out that it is almost universally agreed that tuberculous peritonitis is often associated with the development of a palpable mass in the abdomen. He records two cases in which this resulted in tuberculous peritonitis being suspected, and apparently confirmed at operation, whereas subsequent necropsies made it evident that both patients were suffering from peritoneal carcinoma. In one case the clinical findings and the family history were so definite that no doubt as to the condition was aroused until the necropsy, even though tubercle bacilli had not been recovered. During an operation on this patient a portion of omentum was removed and histological examination supported the diagnosis of tuberculosis. In the second case tubercle bacilli had been found in the sputum of the patient and a diagnosis of tuberculous peritonitis was made after laparotomy. Boles therefore urges that the discovery of a primary focus of tuberculosis should not preclude the consideration of the possibility of carcinoma of the peritoneum, and, since both symptoms and signs may be so strikingly similar in tuberculous peritonitis and peritoneal carcinoma, the most careful consideration of the differential features is essential. The tuberculin test does not furnish sufficiently reliable evidence for diagnosis, but heliotherapy he considers very valuable, since it produces definite improvement, as a rule, in tuberculous cases. A history of a previous attack of ascites with sweats and tachycardia is said to favour tuberculosis, whereas fever and bradycardia are found more commonly in peritoneal carcinoma.

138. Megacolon.

G. LARDENNOIS (*Bull. et Mém. Soc. Nat. de Chir.*, May 17th, 1924, p. 592) records the case of a child of 4 with an enormous dilatation of the colon. The distension of the abdomen was very marked and caused pressure upwards upon the thorax. The circumference of the abdomen was 31 inches, and the base of the thorax was greatly enlarged owing to the abdominal distension. Respiratory movements and the action of the heart were both embarrassed by the pressure. On the left side of the abdomen a large mass was found which at first was thought to be a tumour of the kidney, but was, however, a mass of faecal matter. Below this the colon was softer and distended with gas; peristaltic waves accompanied by attacks of colic occurred from time to time. Constipation was obstinate and difficult to deal with, the bowels acting only at irregular intervals. Radiological examination showed extensive dilatation of the colon; a barium meal was still completely present in the colon after twenty-four hours, and was only fully evacuated after eight days. Rectal examination showed a marked hypertrophy and contracture of the muscular coat above the anal margin. It appeared that this hypertrophy was the cause of the stasis and progressive distension. Under general anaesthesia the muscle was dilated, careful dietary and purgative treatment followed, and the result was very satisfactory. A second dilatation was performed later, and the boy now leads a normal life. In later life, when the colon is hypertrophied, so that a resection is necessary, the removal of the cause as in this case should not be overlooked.

139. Thrombosis of the Cerebral Sinuses in Children.

W. G. WYLLIE (*Brit. Journ. Child. Dis.*, April–June, 1924, p. 124) records three cases of thrombosis of the cerebral sinuses—two following pneumonia and the third in a child with infantile diarrhoea. The age of each patient was under 18 months. Thrombosis of the cerebral sinuses is seldom recognized clinically except in cases of otitic origin, owing to the fact that its symptomatology is common to other conditions which are more frequently encountered, such as meningitis and cerebral abscess. Some help in the diagnosis may be obtained from examination of the cerebro-spinal fluid. In the primary cases it is usually under increased pressure. In most cases it is clear, but it is occasionally blood-stained. The dextrose reaction and the number of cells per cubic millimetre are usually normal. A slight increase in the percentage of albumin may be met with. Sinus thrombosis may arise from causes other than inflammatory, as in cases of chlorosis. The factors which produce this result are an altered state of the blood, weakness of the heart, and degenerative changes in the intima of the blood vessels. Cases secondary to middle-ear disease are amenable to surgical treatment, but recovery in any of the other types of cases is exceptional.

140. The Avoidance of Wounds of the Bile Ducts.

A. ZABOLA and A. J. BENGOLEA (*Lyon. Chir.*, May–June, 1924, p. 281) draw attention to the fact that many surgeons have, during the course of their operations, inflicted injuries on the bile ducts, specially in cases of stones, where the hepatic or common duct has been accidentally divided. The authors themselves have not been able to avoid injuring the bile channels. This has prompted them to find some means of avoiding this mishap. Such accidents, owing to their disastrous results, have occupied the attention of surgeons for some time. Their method depends first on an anatomical knowledge of the parts involved, gained from the dead body, and the technique adopted in the operation of cholecystectomy. When the local conditions are altered by attacks of inflammation, with the loss of all landmarks, the application of their method is of great value. One method advocated has been the mode of removing the gall bladder either from the fundus to the neck or in the opposite direction; this, however, gives uncertain results. In the first place, every surgeon must have a thorough knowledge of the parts involved. Allowing for this the parts may be altered by previous attacks of cholecystitis, or, again, a stone lodged in the cystic duct may make the juncture of the cystic and hepatic ducts impossible to identify. In such cases they insist on the necessity of opening the gall bladder from the fundus to the neck and then removing it more or less completely. A small portion may be left behind, if carefully drained, and thereby damage to neighbouring organs is avoided. Bleeding is prevented by a catgut suture on the cut edges. This method has given excellent results, and the dangers of injury to the ducts and their disagreeable after-effects have been avoided.

141. An Unusual Dermoid.

W. TRETHOWAN and J. DALE (*Med. Journ. of Australia*, May 31st, 1924, p. 540) report an unusual dermoid cyst in the right abdomen. Springing from the level of the third lumbar vertebra, and growing forwards retroperitoneally in the fold of the mesentery, it had a coil of small intestine closely applied to its wall. It was filled with sebaceous material and hair, and projecting into its cavity was a hard mass six inches long and three inches in diameter, with an oval opening at its free end from which protruded an incisor, canine, bicuspid, and two molar teeth firmly fixed in their bony sockets and showing normal pulp chamber and root canals. The body of this tumour consisted chiefly of fat, with a slender rib-like bone running through its length and enlarged at each end. The teeth were set in a separate piece of bone, and among the tooth sockets another immature tooth and a cusp of a canine was found. The rib-like bone was connected with the skin of the tumour by a fibrous canal suggestive of an external auditory meatus, since it was divided by a septum simulating an ear drum, but no ossicles were found. Microscopically hair roots and hypertrophied sebaceous glands were present in the skin of the tumour, and ciliated columnar epithelium was present in the auditory portion.

142. Bullet Wound of the Lung.

S. H. CORRIGAN (*Canadian Med. Journ.*, July, 1924, p. 628) reports a case of the accidental wounding of a boy of 15, a bullet from a .22 rifle entering the right side of the abdomen. The boy did not realize he had been wounded until he felt blood flowing on his skin, and he walked a quarter of a mile to his home. An hour and a half after the injury the abdomen was opened, a bleeding artery discovered in the omentum, and a wound like a furrow found near the edge of the liver; the diaphragm had been perforated also. The patient recovered rapidly and left the hospital twelve days later. Coarse râles were then present over the right lung, there was dullness at the base, and diminished lung expansion, but no pain or discomfort. The dull area increased daily, evidently as the result of serous exudate; there was little cough, but some blood-stained sputum. Three weeks later radiological examination showed that the right side of the chest was full of fluid, and the bullet was detected under the first rib. Twenty ounces of blood-stained fluid were withdrawn; the lung rapidly expanded and appeared to be normal seven weeks after the injury. The health of the patient was good and he returned to work. The author points out that it is evident that such a bullet may enter the abdomen with muzzle velocity, wound the omentum and liver, perforate the diaphragm, and pass through the lung from the base to near the apex without producing any sensation of injury, shock, or suffering. Within a week the lung was completely compressed by haemorrhage and serous exudate, yet after removal of a portion of the fluid the remainder was rapidly absorbed and the lung was apparently normal; therefore, it appeared to be good surgery not to attempt to remove the bullet.

Neurology and Psychology.

143. Psychology in Medical Practice.

W. P. EAGLETON (*Journ. Amer. Med. Assoc.*, June 28th, 1924, p. 2100) emphasizes the importance of the systematic treatment of patients both psychologically and medicinally. Definite psychological benefit is derived from such manipulations as massage in the case of headaches and joint or muscle pains, in addition to the more direct benefits obtained, and such forms of treatment should not be neglected in other conditions, when applicable, even in the relief of the aches and pains of many of the acute infections, for, although the treatment be only symptomatic, yet it may materially shorten the disease. The author adds that sufficient attention is not devoted to the small details of treatment. Telling a patient in an offhand way to take exercise results often in this particular treatment being neglected after a day or two, generally because it proves to be inconvenient or dull. If, however, the doctor orders a definite walk at a definite time, followed by a prescribed meal, and the aid of the patient's imagination is enlisted by the use of a weighing machine, a table of food values, and a little mathematics, greater interest is aroused in the treatment and corresponding benefit is derived. Moreover, the good results of such treatment are more likely to be ascribed to the doctor than if the patient be merely told to take up some exercise in a general way.

144. Laryngeal Paralysis due to War Wounds.

F. J. COLLET (*Arch. Internat. de Laryngol.*, May, 1924, p. 509) publishes details of 25 cases of laryngeal paralysis due to war wounds, and concludes that this paralysis is mainly due to injury of the pneumogastric and only rarely to lesion of the recurrent laryngeal nerve. Injury to one pneumogastric alone may set up cardiac trouble—most commonly tachycardia—which is likely to persist for several years; in addition there may be irregularity of the pulse, extra-systoles, and suppression of the oculo-cardiac reflex. The paralysis may be a pure hemiplegia in type or associated with other paralytic lesions of the parts in relation to the throat (tongue, palate, pharynx, etc.). In cases of pure laryngeal hemiplegia the presence of sensory troubles is the best indication of the implication of the superior laryngeal. The presence of cardiac trouble serves to distinguish between a pneumogastric lesion below the level of the superior laryngeal and a lesion of the recurrent laryngeal. In glosso-pharyngo-laryngeal paralysis the epiglottis may be deviated. Vasomotor changes are very rare unless the lesion is high up, affecting the superior laryngeal, hypoglossal, and sympathetic nerves. The paralysed vocal cord is usually in the cadaveric position. Compensatory changes in the vocal cord are generally well established four or five months after the injury. The fixation of the cord is a paralytic, not an irritative, phenomenon. The signs in traumatic laryngeal paralysis do not support a partial crossing over of laryngeal nerves, whether sensory or motor, with the exception of some filaments to the arytenoids.

145 Progressive Heredo-familial Spinal Amyotrophy.

W. L. ALBO (*Arch. de med., cir. y esp.*, June 7th, 1924, p. 445) states that this condition was first distinguished from myopathies and chronic poliomyelitis by Schulze in 1884. Charcot and Pierre Marie in 1886 described a centripetal or distal form which is the most frequent, and Werdnig in 1891 and Hoffmann in 1833 described a rarer centrifugal or proximal form. Its spinal origin was established by Marinesco in 1894 and by Sainton in 1902. The centripetal form is characterized by the appearance in the distal extremities of the limbs of a slow and progressive atrophy which begins in the muscles of the feet and legs, and after some months or years attacks the hands and forearms. The first symptoms consist in hypotrophy and weakness of the small muscles of the feet, and dysaesthesia, painful spasm, and neuralgia in the lower limbs. In exceptional cases the disease first starts in the upper extremities, causing difficulty in movements of the fingers from involvement of the interossei, thenar, and hypothenar muscles. In rare instances all four limbs are attacked at once. The muscles of the proximal segments—that is, the thighs and upper arms—are not affected until later, and then only in a slight degree, or they may escape altogether. The same may be said of the muscles of the face, neck, shoulders, thorax, spine, abdomen, and pelvis. The muscular atrophy is almost always accompanied by fibrillary contractions in the apparently healthy muscles as well as in those which are atrophied. Sensation is affected in a fair number of cases. The intelligence usually escapes. In the last stage of the disease deformities occur, such as pes cavus, pes equino-varus or valgus, and dislocation of the ankle-joint. The course of the disease is very slow. Cases of survival to an advanced age have been recorded, such as 62 (Dejerine), 78, as in the mother of one of Albo's cases, and 81 (Sainton). The rare proximal or centrifugal form, which shows a predilection for the male sex, begins in early infancy with weakness of the muscles of the nuchal region, trunk, spine, abdomen, pelvis, and buttocks, and then invades the neck, root of the limbs, and lastly the hands and feet. The course is more rapid than that of the centripetal type, the duration being between three and ten years. Death usually takes place between 13 and 15 from respiratory paralysis or bronchopneumonia. The condition must be differentiated from primary progressive myopathy, congenital myatonia, and acute poliomyelitis. The prognosis is good as regards life in the centripetal form, but very unfavourable in the centrifugal variety. The prognosis as regards use of the limbs is not very unfavourable in the centripetal form, as the patient can generally follow his usual occupation until an advanced age, complete paralysis either not occurring at all or not till late. Except in the form due to syphilis, when intensive treatment by bismuth, arsenic, mercury, and iodide is indicated, drugs are useless, but relief may be obtained by mechano-therapy, massage, baths, electro-therapy, and orthopaedic measures.

146. Atypical Forms of Funicular Myelitis.

R. HENNEBERG (*Klin. Woch.*, May 27th, 1924, p. 970) considers that next to tabes and disseminated sclerosis, funicular, or tract, myelitis (myelosis) is the most frequent organic spinal cord disease, though cases are usually included in the group of combined disease of the posterior and lateral columns. In funicular myelitis the symptoms are those of lesion of both lateral and posterior columns. Often both groups of symptoms are marked; sometimes one group is much more prominent than the other. Early symptoms are marked paraesthesia and feeling of heaviness in the legs. Anaemia and general weakness are associated with the spinal symptoms. Middle-aged people, weakened by long deprivation and overwork, are chiefly affected. In pernicious anaemia similar spinal symptoms may occur, but the symptoms of the blood affection are the more prominent. Degenerative changes are found in the cord, chiefly in the posterior columns, the lateral pyramidal and direct cerebellar tracts, and the region adjacent to the anterior longitudinal fissure. In all marked cases the disease is related to anaemia; the cause is considered to be a toxin (or, according to Modes, avitaminosis). Atypical cases occur—one is reported in which the pathological changes were limited to the posterior columns; another in which the symptoms were those of spastic spinal paralysis; but pathological changes were found in both the posterior and lateral columns. The occurrence of pure lateral column disease in funicular myelosis (myelitis) is uncertain; but the symptoms of pure spastic spinal paralysis are not infrequent. Degenerative myelitis and compression myelitis must be separated from true infiltrative myelitis, which is very rare, and cannot be distinguished clinically. Degenerative conditions are nine times more frequent than infiltrative changes. In funicular myelitis the changes are not truly inflammatory; hence the term "myelosis" is suggested in place of "myelitis."

Obstetrics and Gynaecology.

147. Treatment of Carcinoma of the Cervix.

E. DOUAY (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, 1924, 5, p. 341) states that at the Broca clinic treatment of cervical carcinoma by radium as a preliminary to operation has now been restricted to cases which are so late as to be at the border-line of operability; these are frequently rendered operable, although the remote results are not on the whole favourable. The advantages claimed for pre-operative radium application are that (1) it diminishes the size of the cervix and facilitates operative removal; (2) it renders the cervix less septic and favours its disinfection; (3) it increases the motility of the uterus; (4) it sterilizes the cancerous cells and diminishes the risk of transmitting malignant grafts at operation. Of these advantages the fourth is a real one, but the first and second can be attained more rapidly and simply by curettage and applications of iodine immediately before surgical intervention; as to the third, it is true that after radium treatment clinical examination shows apparent increase in the motility of the uterus, but nevertheless dissection at the operation is found to be difficult by reason of the presence of a network of fibrous tissue in the parametria. Pre-operative radium application has the following drawbacks: (1) Necroses—for example, in the cervix—may follow and increase the surgical risk; (2) the vitality of the tissue cells may be diminished, so that there is greater danger of post-operative necroses; (3) latent adnexal inflammations may be lighted up—a dangerous preliminary to operation. Faure and Douay have formed also the impressions that radium applications may lead to increased activity in

rancerous cells in the pelvic lymph glands, and that distant non-pelvic metastases are more frequent in patients treated by radium. Against the great improvement in the patient's general condition which sometimes follows radium therapy is to be set the fact that the illusory hopes thereby aroused may lead to refusal of operation. The experience of the Broca clinic is definitely unfavourable to radium applications after wide hysterectomy; recurrences, it is stated, are more frequent when this has been done than after operation alone.

148. Ovum Migration and Salpingectomy.

H. H. SCHLINK (*Med. Journ. of Australia*, June 7th, 1924, p. 555) concludes, from a review of the literature and his own cases, that there is ample clinical evidence of internal and external migration of the fertilized ovum, Mayrhofer estimating that it takes place at least once in ten ovulations. The importance of excising the entire intramural or muscular section of the Fallopian tubes in salpingectomy is urged in order to avoid the occurrence of ectopic gestation, and to prevent the development of interstitial abscesses should any subsequent infective processes arise. Three cases are reported, illustrating external migration, internal migration with ruptured interstitial ectopic gestation, and both internal and external migration with a similar complication.

149. Rupture of the Uterus.

A. CAUCCI (*Rif. Med.*, July 7th, 1924, p. 631) reports three cases of rupture of the uterus and adnexa in connexion with labour. The first case was that of a woman, aged 36, in whom labour was induced at four months because of epilepsy. It was then found that what were believed to be foetal parts were in reality a coil of intestine. The patient was sent into hospital, and after laparotomy a perforation of the uterus was discovered, together with laceration of the rectum and colon. Total hysterectomy was performed and partial colo-rectal resection, with anastomosis by invagination of the bowel; the patient left the hospital quite well. In the second case the woman was delivered of twins, and in the process of extraction (by the blunt hook) of the second child much bruising occurred, followed by signs of peritonitis. On laparotomy the uterus was found to be ruptured subperitoneally, the bladder also was torn, and there was an extensive retroperitoneal urohaematoma. The uterus was excised, and the bladder sewn up extraperitoneally; the patient left the hospital cured. The third case was also a case of twins, with much difficulty in delivering the second child (pulling on the foot with the shoulder wedged). In this case the uterus was not ruptured but there was an extensive laceration of the bladder and vagina. The lesions were sutured and complete recovery followed.

Pathology.

150. Experimental Rickets and Strontium Intoxication.

G. PROTTI (*La Chir. d. Organi d. Mov.*, June, 1924, p. 470) made an examination of young animals, such as puppies, chickens, and rabbits, exposed to chronic intoxication by strontium salts, which had given rise to a severe systematized skeletal dystrophy closely resembling rickets, and found traces of the salts about fifty days after their last administration. Comparison of the chemical composition and histological structure of the affected bones showed that the two phenomena of elimination of the poison from the skeleton and eburnation of the bones were closely associated with one another, so that the conclusion could be drawn that the presence of strontium in the bony trabeculae hindered calcification, whereas eburnation was a sure sign of the elimination of the poison.

151. Independence of Human and Bovine Tuberculosis.

A. LICHTENSTEIN (*Acta Paediatrica*, June 16th, 1924, p. 397) has conducted a statistical survey of the incidence of tuberculosis in cattle in different counties in Sweden, comparing it with the death rate from tuberculosis among human beings during the first year and first five years of life. It was found that the mortality from tuberculosis during the first year of life varied greatly in different parts of the country, and, as a rule, the infant mortality from tuberculosis was higher in the towns than in the country districts. As for the incidence of bovine tuberculosis there were great differences in the various counties; in the large northern county of Norrbotten only five cattle were found to be tuberculous, but the infant mortality from tuberculosis was exceptionally high. On the other hand, in the county of Kristianstad there was a low infantile death rate from tuberculosis, although the incidence of bovine tuberculosis was high. The twenty-four counties were divided into two equally large groups, the twelve counties with much bovine tuberculosis being grouped in the one, and the twelve counties with little bovine tuberculosis being grouped in the other. The average incidence of bovine tuberculosis in the first group was 2.7 per 10,000, whereas in the second group it was 13.8. In the first group the tuberculosis mortality among infants under the age of 1 was 16.6 per 10,000, in the second group it was 17.8. In other words, though the incidence of bovine tuberculosis was about five times greater in one group of counties than in the other, the infant mortality rate from tuberculosis was practically the same for both groups. Following a second line of research the author has compared the death rate from tuberculosis among children in the first years of life with the tuberculosis death rate at all ages in the different Swedish counties. It was found that counties with a high mortality from infantile tuberculosis also had a high tuberculosis rate for all ages, and vice versa.

152. Experimental Diphtherial Keratitis.

C. ZOELLER and MANOUSSAKIS (*C. R. Soc. de Biologie*, May 30th, 1924, p. 1399) inoculated the eye of a guinea-pig in which slight desquamation of the conjunctiva had been produced by instillation of diluted bile with a twenty-four hours' growth of diphtheria bacilli. At the end of twenty-four hours the inoculated eye was closed, the lids swollen and united by a greyish exudate which covered the conjunctival culs-de-sac, and the cornea had not lost its transparency. Diphtheria bacilli were obtained in smears and cultures. At the end of forty-eight hours the lesions were still more marked, and numerous colonies of diphtheria bacilli were obtained in pure culture. After injecting a guinea-pig with two doses of 1 c.cm. of anatoxin, with ten days' interval between each injection, Zoeller (Ibid., p. 1400) inoculated it on the sixteenth day in the right eye with diphtheria bacilli, as well as a control animal which did not receive anatoxin. Forty-eight hours later the control animal showed typical diphtheritic conjunctivo-keratitis, while the immunized animal showed only slight corneal opacity without any signs of diphtheritic infection. The same eye was then inoculated again with a large dose of diphtheria bacilli, which caused only a slight increase of corneal opacity, but did not give rise to any membrane or swelling. Anatoxin thus renders a guinea-pig refractory to infection by diphtheria bacilli after a period of sixteen days and two successive inoculations. It does not, however, confer immediate protection, as is shown by the fact that anatoxin, even when given subconjunctivally twenty-four or forty-eight hours after inoculation of the eye with bacilli, does not prevent local or systemic infection.

153. Tuberculosis and Nutrition.

B. LEICHTENTRITT (*Zeit. f. Hyg. und Infektionskr.*, 1924, p. 388) has carried out a number of experiments on guinea-pigs in an endeavour to ascertain the relationship existing between the presence of accessory food factors in the dietary and the course of tuberculosis. The animals were divided into three sets: all were given a basal diet of greens; but whereas the first set received this alone, the second set was given in addition varying quantities of fresh lemon juice, and the third set varying quantities of cod-liver oil. The mode of infection varied in the different experiments; sometimes the tubercle bacilli were injected subcutaneously, sometimes intraperitoneally; sometimes they were derived from a culture, at others from the sputum or the cerebro-spinal fluid. The general findings were as follows: The control animals on the diet of simple greens died after varying periods of time, depending on the dose and the mode of injection, having lost considerably in weight. The animals fed on greens and lemon juice generally lived longer than the controls, and frequently —especially when given large quantities, such as 20 to 30 c.cm. of juice daily—actually put on weight. In spite of this improvement in the general nutrition, however, they were often found at autopsy to be affected with extensive tuberculosis. It appears that the effect of the lemon juice is to improve the general nutrition of the animal—especially its fat-storing powers—and to raise its resistance to the tubercle bacillus in such a way that this behaves more as a saprophyte than as a parasite—that is, it grows freely in the animal body, without exercising any definite toxic effect. The animals fed on cod-liver oil lost weight and died in much the same time as the controls, and after death widespread tuberculosis was found. Leichtentritt reports that they also developed a curious disease, often after the first dose. Its main characteristics were hypersecretion of the sebaceous glands producing a ruffled, oily skin, dry and brittle hair, and extraordinary excitability, manifested by a wild and aimless rushing about, stopping only when exhausted; and a spastic gait, the animals running about on their toes. The animals died of exhaustion; at autopsy their fat reserves were found entirely depleted. That this disease is due rather to the fat than to the vitamin-A content of the oil is suggested by the fact that two animals fed on pig lard developed the same symptoms.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

154. Syphilis and Pernicious Anaemia.

RAHLWES (*Dermatol. Woch.* June 21st, 1924, p. 703) states that although it has been known for a long time that syphilis is sometimes associated with pernicious anaemia, the exact relationship of the two diseases has not been discovered. Rahlwes therefore reports the following case. A man, aged 52, who was suffering from fever and severe anaemia, presented the complete blood picture of pernicious anaemia: red cells 1½ million per c.mm., leucocytes 3,500, haemoglobin 17.3 per cent. The spleen and liver were much enlarged; there was no free hydrochloric acid in the gastric juice, the total acidity being 12; occult blood was absent. He had had gonorrhoea at 20, but denied syphilis. The Wassermann reaction was, however, strongly positive, and under a course of neosalvarsan, grey ointment, and potassium iodide, his condition rapidly improved. In three months the haemoglobin count rose from 17.3 to 61.8 per cent. and the red cells from 1,200,000 to 4,700,000, while the anisocytosis was greatly improved. Three months later he left hospital much improved, but about nine months later he was readmitted and a blood count showed that the red corpuscles had fallen to 1,150,000 per c.mm., and the leucocytes to 2,300; there was much anisocytosis, and the haemoglobin count was 27 per cent. The urine was free from albumin, but the deposit contained scattered leucocytes, epithelial cells, and casts; the Wassermann reaction was negative. The patient was very anaemic, weak, and exhausted, slightly jaundiced, and the liver was still much enlarged and very hard. There was a systolic bruit at the heart apex. In view of the evidence of syphilis and the great improvement that had followed the previous treatment, another course of neosalvarsan, together with grey ointment and potassium iodide, was prescribed, but the patient failed to respond. Signs of heart failure appeared; digitalis and caffeine were tried without success, and the patient died nineteen days after readmission. At the necropsy the heart was pale, flabby, and dilated; the aortic intima was irregularly thickened and somewhat rough. The apices of both lungs contained hard, blackish masses, each as large as small apples; that in the right apex was free from caseation, but in the left apex there were signs of caseation. Rahlwes suggests that pernicious anaemia, while due to some unknown toxaemia, may remain in abeyance for a long period, but that an infection such as syphilis (which is itself capable of producing severe anaemia) sets free some toxin hitherto held in abeyance by the protective mechanism of the organism.

155. Angina Pectoris and Syphilis.

In spite of Disraeli's dictum as to the superlatively deceptive value of statistics, L. GALLAVARDIN (*Presse Méd.*, July 16th, 1924, p. 598) ventures to publish certain deductions derived from an experience of 450 cases of definite angina pectoris. He has only included those cases of angina which follow exertion, and has excluded all cases developing in the course of valvular disease. Speaking generally, he has found evidence of syphilis in 30 per cent. of his cases (including 9 per cent. doubtfully syphilitic). Separating these into groups he found 88 per cent. syphilitic in cases of angina associated with aortic insufficiency (constant in aortic aneurysm). In angina without aortic lesion the proportion of syphilis sinks to 20 per cent.; the earlier the case (that is, below 40 years) the greater the proportion of syphilis. In cases of angina with breathlessness after exertion in patients with high blood pressure the evidence of syphilis fell still lower—to 14 per cent. These statistics show that it is not right to assume that angina pectoris means of necessity antecedent syphilis, a view taken by some cardiologists.

153. Alcoholism and Tuberculosis.

I. W. SAMSON (*Deut. med. Woch.*, May 9th, 1924, p. 613) medically examined 1,300 prostitutes in Berlin before and during the first part of the war. Apart from venereal disease, nicotine poisoning, and the ill effects of temporary, but frequent, sojourns in prisons, the life of a prostitute was fairly healthy, and it was possible to form a comparatively reliable opinion of the relationship of alcoholism and tuberculosis. Among the 1,300 there were 384 prostitutes who were more or less addicted to alcohol (29.1 per cent.). These drinkers were classified in three groups, according as their consumption of alcohol was moderate, considerable, or excessive. Samson discovered 299 cases of pulmonary tuberculosis, and found that 66, or 17.2 per cent., of the 384 alcoholics were suffering from tuberculosis; whereas 233, or 25.4 per cent., of the 916 sober prostitutes were suffering from this disease. Of the 299 tuberculous prostitutes, 66, or 22.1 per cent., were alcoholics, whereas of the 1,001 healthy prostitutes, as many as 318, or 31.8 per cent., were alcoholics. In other words, the proportion of alcohol consumers was considerably higher among the healthy than among the consumptive prostitutes. The author notes that his clinical findings are confirmatory of the report of Johannes Orth, who in 1916 published an account of necropsies performed over a period of ten years on 218 drinkers, most of whom were heavy drinkers. Orth found that the heavier the drinker the more likely was the pulmonary tuberculosis to be healed. Somewhat similar findings were published in 1913 by Berthblet of Lausanne, who discovered a slightly lower incidence of tuberculosis in necropsies on alcoholics than on non-alcoholics. After discussing these and other observations, the author insists that if the campaign against alcoholism is to be rational and efficient it must be supported by scientifically established facts and not by speculative hypotheses which do not bear scrutiny.

157. Acid Sodium Phosphate in Neurasthenia and Graves's Disease.

H. J. VETLESEN (*Norsk Mag. f. Laegevidenskaben*, May, 1924, p. 337) has for nearly thirty years been giving acid sodium phosphate in cases of neurasthenia, psychasthenia, and general debility, with marked success, but, till he read about Emden's investigations during the war at the Physiological Institute in Frankfurt, he felt his advocacy of this drug was only empirical. Emden showed in 1915 that the output of work by horses living only on cabbages could be greatly increased by giving them 80 grams of acid sodium phosphate daily, and the bodily and mental vigour of soldiers was also found to be greatly increased by a single daily dose of 5 to 7.5 grams of the same drug. The author has given it to several hundred patients with simple goitre, and in most cases has succeeded in arresting the development, or actually diminishing the size, of the thyroid gland. He has also treated 77 cases of genuine Graves's disease, the total amount of acid sodium phosphate given in the day being 4 grams. Ten of these patients subsequently underwent an operation, and one of them, a man, was operated on twice. He returned to the author showing marked signs of Graves's disease, great exophthalmos, and a pulse of 158. On palpation there seemed to be nothing left of the thyroid gland. The author gives acid sodium phosphate for months and even years, with short intervals, and has never seen intolerance to it. On the other hand, he has found it an excellent sedative, the pulse rate declining and tremor disappearing. He has even known exophthalmos diminish or disappear under this treatment.

158. Chronic Haemorrhagic Gastritis.

L. URRUTIA (*Arch. de med., cir. y esp.*, March 1st, 1924, p. 377) states that, in addition to acute erosion due to circulatory disturbances, intoxications, infections, etc., there is a group of chronic erosions of the stomach which was described by Einhorn in 1894. This group is characterized by chronic pain, which is usually not intense, occurring immediately after meals, but not connected with their quality, and lasting one to two hours. It is rarely continuous, and may appear independently of food. There is also debility and loss of flesh. The course is chronic and relapses are frequent. The gastric chemistry does not show any specific characters, although diminution of acidity is the rule and hyperchlorhydria is exceptional. There is abundance of mucus in the gastric contents, but the essential diagnostic feature, according to Einhorn, is the constant presence of small particles of the mucous membrane in the stomach washings, which are usually clear and only exceptionally cloudy. The probable cause of these erosions, which have not been demonstrated anatomically, is in the majority of cases chronic gastritis. In 1900 Pariser published similar cases, but accompanied by intense pain diffused throughout the stomach, and insisted on the regular presence of small pieces of mucous membrane in the stomach washings, attributing the symptoms to ulcerative gastritis. These findings were subsequently confirmed by many other observers, such as Ewald, Boas, Albu, Strauss, and Knud Faber, and Urrutia himself has seen about half a dozen examples. The prognosis of erosive gastritis is good. The treatment consists in washing out the stomach with a 1 per 1,000 solution of silver nitrate and in the administration of large doses of bismuth. In addition to Einhorn's

disease—as it is called by Muntz—Nauwerk, Mathieu, and Sansoni have described a chronic ulcerative anachlorhydric gastritis characterized by large or small gastric haemorrhage, but without any ulceration being found *post mortem*.

159. The Initial Fever in Tertian Malaria.

P. C. KORTEWEG (*Nederl. Tijdschr. v. Geneesk.*, April 12th, 1924, p. 1622) records his observations on the initial fever in cases of general paralysis inoculated with tertian malaria in the clinics of K. H. and L. Bouman at Amsterdam. From September, 1921, to the end of November, 1923, 66 patients were inoculated, two of them twice, as no result followed the first inoculation. In 52 cases a careful examination of the blood was made for the first appearance of *Plasmodium vivax*, and it was found that it never appeared before the fifth day or later than the twenty-first day after inoculation, and that it was most frequently present between the sixth and twelfth days. Usually there was no constitutional reaction directly after the inoculation, but in about a third of the cases there was a rise of temperature to 100.4° or 102.2° on the day of injection, or one or two days later. This rise of temperature had nothing to do with malaria, and entirely disappeared within a few hours. The malarial pyrexia began about the same time as the plasmodia were first found in the blood. Among 37 cases Korteweg found that the plasmodia appeared before the rise of temperature in 13 on the same day and in 6 afterwards. The character of the initial fever in 68 cases was as follows: in 36 it was a continued remittent, in 12 intermittent, and in the rest irregular.

Surgery.

160. Diagnosis of Ruptured Urinary Bladder.

R. T. VAUGHAN and D. F. RUDNICK (*Journ. Amer. Med. Assoc.*, July 5th, 1924, p. 9) describe a new way of diagnosing rupture of the urinary bladder sufficiently early to forestall peritonitis. A small rubber catheter is passed through the urethra with the usual asepsis. If the bladder is ruptured a few cubic centimetres of blood or blood-stained urine usually escapes. The catheter is fastened temporarily in the urethra by means of adhesive strips, and the patient is examined by *x* rays. Air is introduced through the catheter into the bladder by means of a hand bulb, about 50 to 100 c.cm. being ample, though more may be introduced if desired. In the case of intraperitoneal rupture the air is seen to escape into the abdominal cavity, and, with the patient lying on his left side, it accumulates immediately under the peritoneum, allowing the bowel and liver to fall away from the right abdominal wall. If the patient sits up this free air is seen to collect between the diaphragm and the liver. In extraperitoneal rupture the air escapes into the loose tissue around the bladder, and is seen to spread along the fascial planes outside the peritoneal cavity. In cases without rupture the air accumulates in the bladder, distends it, and the regular vesical outline is produced. The authors describe in detail the treatment of five cases, and point out the value of differentiating between intraperitoneal and extraperitoneal rupture, the surgeon being able in the latter case to avoid opening the peritoneal cavity. They do not think that there is any added risk to the patient either from air embolism or from infection, and no discomfort is caused.

161 Modern Treatment of Bone and Joint Tuberculosis.

G. R. GIRDLESTONE (*Journ. Bone and Joint Surg.*, July, 1924, p. 519), discussing the modern treatment of tuberculosis of the bones and joints, points out that while a tuberculous focus in a bone or joint is part of a deeply rooted disease and evidence of a pre-existing infection of the body, which is advancing and gaining the upper hand, modern treatment by rest, diet, open air, and sunshine, if continued for a sufficient length of time, will almost always effect a cure, which after-care measures can render permanent. The necessity for such skilled after-care is shown by the frequency of relapses when the patient is discharged from hospital to unsatisfactory home surroundings unless continuous after-care supervision is maintained, with prompt readmission when necessary. Treatment aims at raising the patient's general vitality, health, and powers of resistance, the elimination of any factors harmful to the diseased part, the avoidance of septic infection, and the restoration of function, all of which require rest, good feeding, open air, and sufficient time. In the application of heliotherapy the gradual exposure of the body is important in order to develop pigment, which, by protecting the deeper layers of the skin and underlying tissues from the photochemical effect of sunlight, allows the patient to respond better to treatment. While the sun heats and the wind cools, active hyperaemia of the skin is promoted and metabolism stimulated—the wind causing a reflex stimulation of the deep organs from the skin. In providing rest splintage should hold the parts accurately and comfortably in position without constricting the circulation or interfering with respiration, while allowing exposure of the affected part to the sun and air together with as much exposure of the rest of the body as possible. During active disease perfect uninterrupted surgical rest is indicated, but with the cessation of all pain and spasm comparative immobilization permitting of minor movements should be adopted. A cold abscess, the fluid of which is harmless, should only be aspirated if the skin is threatened; it should never be opened and drained.

162. Nephrectomy for Bilateral Renal Tuberculosis.

G. EKEHORN (*Hygiea*, June 15th and 30th, 1924, pp. 353 and 386) is in favour of removing the more diseased kidney in cases of advanced bilateral renal tuberculosis when there are grounds for believing that it is responsible for severe pain and fever. Among about 200 cases of renal tuberculosis he has observed 27 advanced cases (24 males and 3 females) in which he could not carry out every exploratory test, such as catheterization of the ureters, cystoscopy, etc. In these cases he directly explored the kidneys by operation, and in 7 cases found the conditions to be unsuitable for nephrectomy. He performed this operation in the remaining 20 cases, the exploration of the kidney on one side and the nephrectomy on the other being undertaken at the same time. The wounds were closed at once and healed uneventfully. Almost all the 20 patients responded to this treatment by an improvement in their condition, pain diminishing, and the urine becoming clearer. They were operated on between 1910 and 1922, and an inquiry conducted in the autumn of 1922 showed that 10 were dead, 5 could not be traced, and 5 were still alive. Among the survivors there were 2 whose operations dated back twelve years. They were still fit for work and complained of no pain. The urine contained no albumin, but they still had to micturate more than once during the night. A third survivor, operated on five years earlier, could also work as before and had no pain. Of the 10 patients who were known to have died, one had lived six years after the operation, and another two years. It would thus seem that, in selected cases, nephrectomy may be more than temporarily beneficial in cases of bilateral renal tuberculosis.

163. Erect Dislocation of the Shoulder.

F. S. LYNN (*Surg., Gynecol. and Obstet.*, July, 1924, p. 51) draws attention to the frequency of dislocations of the shoulder, whilst the number of erect dislocations of the joint is small. In some clinics no cases of the latter have been recorded; none occurred among 539 shoulder dislocations at St. Thomas's Hospital, London. This dislocation is a variety of the subglenoid, and the head of the bone is always found against the side of the chest. There are three cardinal symptoms: (1) elevation of the arm, (2) fixation in this position, and (3) pain, increased by any attempt to lower it. The forearm is usually flexed and resting on the top of the head. The fixation of the arm in this position is explained by the tenseness of the anterior and posterior parts of the capsule, whilst the long head of the triceps also fixes the head of the bone. The ages of the patients range from 21 to 60 years. If over 60 there is usually a fracture because of the brittleness of the bone. For the actual production of the dislocation violent force is not necessary; when it occurs the bone is usually abducted or extended and the forearm pronated; occasionally nerve injuries may be present. Reduction by upward traction of the arm has been successful in most cases. It has been possible to collect records of 28 cases, and the author reports 3 further cases.

164. A Case of Congenital Megacolon.

A. BERGE, CHEVRIER, and P. LEFÈVRE (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 17th, 1924, p. 1111) record an example of enormous congenital dilatation of the colon in a boy aged 15 years. When admitted his abdomen was much distended and he was slightly cyanosed on exertion. He had not passed faeces for three weeks, but much flatus was escaping. From birth he had been troubled with constipation. Faecal vomiting set in, and the abdomen was opened for obstruction. The patient died ten days later; he had passed no faeces naturally for thirty-eight days. At the autopsy the colon was found enormously dilated—20 in. long, 11 in. wide, and 21½ in. in circumference—the lungs and heart being pushed high up behind the sternum. There was a large mass of retained faeces weighing 30 lb., and a hydronephrosis due to pressure of hard faeces in the pelvis. Histologically the colon showed hypertrophy of the walls, especially of the circular layer, and a growth of connective tissue in all the planes, more particularly in the mucous layer, where epithelium had completely disappeared. A diagram of the abdomen shows clearly how enormous the colon was.

Ophthalmology.

165. Papilloedema.

W. A. HOLDEN (*Arch. of Ophthalmol.*, July, 1924, p. 316) in this paper emphasizes the fact that true papilloedema due to raised intracranial pressure almost invariably leads to blindness unless a decompression operation is done. It is necessary, though often difficult, to distinguish between papilloedema, papillitis, and pseudo-neuritis. In papilloedema the nasal border of the disc becomes blurred first and the temporal border last, the disc becomes elevated to as much as 3 to 5 dioptres of swelling, the physiological cup becomes obliterated, and haemorrhages appear. Papilloedema is rare in myopic eyes, and does not develop in an atrophic nerve. Vision is for some time unaffected and the visual field remains full, though the blind spot is enlarged. Later, contraction of the field, first on the nasal side and then concentrically, occurs with reduction of central vision. Papilloedema is essentially a non-inflammatory process, and is associated with increased pressure of the spinal fluid, as can be shown by lumbar puncture. Papillitis is a true inflammation of the disc, and is usually unilateral. The swelling of the disc rarely exceeds 2 dioptres, but there is generally considerable oedema of the surrounding retina. Vision fails early, the first changes being enlargement of the blind spot and a central scotoma. The common causes of the condition are nasal sinusitis and inflammation of the orbit. The spinal fluid is not under pressure. Pseudo-neuritis is seen in high hypermetropia; it is an anatomical condition, and remains stationary; there is slight swelling of the disc, but no oedema and no haemorrhages.

166. Retrobulbar Optic Neuritis of Ethmoido-spheno'dal Origin.

G. PORTMANN and P. PESME (*Rev. de Laryngol., Otol. et Rhinol.*, May 15th, 1924, p. 289) describe two cases of retrobulbar neuritis in which the sphenoidal and posterior ethmoidal sinuses contained pus and granulation tissue. In each case there was a small but absolute central scotoma. In one there was marked papillitis with a red disc, some swelling, and engorged vessels; in the other the changes in the disc were much less marked. Operative treatment of the sinuses caused a very rapid recovery to almost normal sight. The central scotoma is the subjective phenomenon of a lesion of the papillo-macular bundle. The term retrobulbar, or better retro-ocular, neuritis is fittingly applied to inflammation of the papillo-macular bundle, and is distinguished from a descending neuritis, which does not give rise to a central scotoma. The disc in the latter type shows a discoloration of the temporal portion, which is due to atrophy of the macular bundle; this type corresponds more to that which follows intoxication by tobacco and by alcohol. The neuritis provoked by diabetes and by syphilis is usually bilateral, is accompanied by other signs of the disease, and has a less acute onset. In the cases described the central scotoma is accompanied by the condition of papillitis, and this association of symptoms and signs, which is apparently only found in cases which follow posterior sinus suppuration, should always lead to investigation of the sinuses.

167. Leber's Disease.

BAUDOT (*Rev. méd. de l'Est*, May 1st, 1924, p. 296) records a case of Leber's disease or hereditary optic atrophy. The patient was a man, aged 23, who sought advice because his vision had been getting progressively weaker for the last two years, so that he was unable to walk without a guide. At the onset he had had some transient frontal headache. On examination the reaction to light was diminished, but the reaction to accommodation and convergence was preserved in both eyes. The cornea, iris, lens, and media were normal in both eyes, which showed slight myopia. Visual acuity in both eyes was reduced to perception of light. The fundi showed well marked bilateral optic atrophy. The Wassermann reaction was negative. On inquiry, a history was obtained of five other similar cases in the family—namely, a maternal uncle affected at 33, his two cousins, male and female, affected at 24 and 25 respectively, a son of the female cousin affected at 13, and the patient's maternal great-uncle, in whose case the date of onset could not be ascertained. The present case corresponds to the description of the disease given by Leber under the name of "familial retrobulbar neuritis" in presenting the following characters: greyish-white atrophy of both papillae with regular margins, dyschromatopsia for green, and the absence of any cause, such as intoxication, infection, or cranial deformity. The date of appearance of the atrophy, both in the patient and the other affected members of the family, corresponded to the average age, which ranges from 13 to 33, with a maximum between 21 and 25. The character of the disease was distinctly hereditary, as five persons were affected in three generations. Males are affected in preference to females, only one of the five being a female in the present case. In spite of the absence of a history of syphilis slight improvement took place after treatment by bismuth.

168. Intrinsic Ocular Paralysis after Acute Infect'ons.

J. DE J. GONZALEZ (*Amer. Journ. of Ophthalmol.*, May, 1924, p. 351) suggests that these late paralyses coming on after acute infectious diseases may be due to a non-specific substance which is possibly a by-product of the chemical defensive substances elaborated by the body against the toxins of the infectious disease. Significant facts in support of this idea are that the paralyses usually occur in the second or third week of convalescence, when it might be supposed that any direct action of the infecting organisms and their toxins would be absent, that it is more often in the mild cases of the diseases that the paralyses occur, and that when the paralysis has appeared curative serums have little or no effect upon its progress. The hypothetical paralysing substance he likens to a drug, such as atropine or nicotine, and thinks that its specific site of action is the neuro-muscular synapse.

Obstetrics and Gynaecology.

169. Are Ovarian Extracts Therapeutically Useful?

M. R. ROBINSON and B. ZONDEK (*Amer. Journ. Obstet. and Gynecol.*, July, 1924, p. 83) cast further doubt on the specificity of the effects produced by administration of extracts of ovarian substance. Their experimental work was carried out in virgin guinea-pigs: previous investigators, they think, have not attached sufficient importance to the fact that animal genital organs show marked seasonal variations in size and blood content, and they have relied on naked-eye inspection rather than the weight of the uterus as compared with the total body weight. Proprietary ovarian products produced after tryptic fermentation were found uniformly ineffective, but chemically de-albuminized products from time to time produced uterine hypertrophy. Chemically de-albuminized extracts of testis, pineal gland, and thymus were equally effective in some cases: but extracts of the anterior lobe of the pituitary gave no results. Parenteral injections of an albuminoid mixture, such as sterilized milk, were as successful as "ovarian therapy" in inducing uterine hyperplasia. Testing the biogenic amino-bodies the authors found that guanidine, arginin, tyrosin, and tyramin were ineffective; histamine, alone or in a proprietary product combined with tyramin, brought about with fair regularity enlargement of the uterus. The general conclusion drawn is that genital growth may be stimulated by administration of non-specific amino-bodies which are the result of protein decomposition, as well as by the so-called specific extracts. To obtain a true endocrine effect with ovarian extracts is impossible, for in the process of preparation the active principle is destroyed; any slight therapeutic success is obtained by non-specific means.

170. Rupture of the Uterus.

D. S. HILLIS (*Surg., Gynecol. and Obstet.*, July, 1924, p. 32) reports four cases of ruptured uterus encountered in eight months. There was a striking similarity between these cases; in all of them the rupture occurred during pregnancy, and occupied the site of a Caesarean section scar. In each case the uterus was removed and the patient recovered. He draws the following conclusions from the study of these cases. The scar of a Caesarean section may rupture not only during the course of labour, but at any time during the last three months of pregnancy. The localization of the placenta over the scar seemed to have no influence: in two cases fragments of syncytium were found over the scar, while in the two other cases no sign of placental tissue could be seen at the site of the scar. In one case there may have been a traumatic cause, since the patient fell down in a faint before the pain began; in the three other cases severe and sharp pain was the first symptom noted, and in one case the rupture occurred while the patient was asleep. The rupture in the scar allowed the uterus to empty completely, and good contraction and retraction followed, stopping the haemorrhage. In no case was there external bleeding, because labour had not begun and the cervix was closed. The line of rupture in each case was in the scar tissue, and the contraction of the uterus held the edges of the wound so far apart that they could only be approximated with great difficulty. The author considers it advisable to remove the uterus in these cases, owing to the time required to freshen the scar edges and the danger of a further rupture in a subsequent pregnancy.

171. Treatment of Progressive Phthisis during Pregnancy.

J. MISGELD (*Zentralbl. f. Gynäk.*, June 28th, 1924, p. 1438) has followed Bumm's advice, and during the last fifteen years has treated 56 cases of advancing phthisis in pregnant women by hysterectomy and double salpingo-oöphorectomy. During the same time 46 patients with phthisis have been treated by induction of abortion, and the results are compared, showing the operative treatment to be markedly the better. Thus the mortality for operative cases was 28.2 per cent., as compared with 37 per cent. for induction; 3.5 per cent. remained unbenefited after operation, 17 per cent. after induction; only 3.4 per cent. became worse after operation, whereas 35.5 per cent. deteriorated after induction. Post-operative symptoms, such as flushings, etc., were not frequent, and in the worst cases only lasted for a year at the most. The author states that the condition warrants this somewhat drastic treatment, since pregnancy is the worst complication which can affect the tuberculous woman. This, according to Winter, is due to the increased need of oxygen and nutriment during pregnancy, the frequent accompaniment of hyperemesis, and the increased chances of mechanical spread of infection. During labour tubercle bacilli pass readily from the placental site into the blood, and the loss of blood is a weakening influence. In the puerperium exhaustion from loss of lochia and blood, and, above all, from lactation, causes the disease to progress rapidly. Phthisis is also aggravated during sexual life, increased sexuality causing rises of temperature. Misgeld adds that the following conditions are to be observed before operation should be undertaken: (1) No cavities must be present in the lungs. (2) The woman must be normal mentally. (3) The pregnancy must be under four months' duration; if over six months operation is contraindicated, as also is induction. (4) The woman, if possible, should have several living children. With these provisions the author is in entire agreement with Bumm that hysterectomy, together with the removal of the appendages, is the best method of treatment.

Pathology.

172. Bacteria of the Stomach, Duodenum, and Bile Ducts.

F. VIRGILLO (*Arch. Ital. di Chir.*, June, 1924, p. 393), as the result of his investigations in the Surgical Clinic of Padua University, has come to the following conclusions: (1) There is a slight difference in the results obtained from examination of the gastric contents removed by Einhorn's tube as compared with direct examination of the contents during gastro-entero-anastomosis. By the former method the contents were found to be sterile in 19 per cent. and in the latter in 23.5 per cent. After extraction with Einhorn's tube the gastric contents were found to be sterile in 1 out of 4 cases of duodenal ulcer, in 2 out of 6 cases of pyloric stenosis due to gastro-pyloric or pyloro-duodenal ulcer, and in 2 out of 9 cases of disease of the bile ducts. The gastric contents always showed an abundance of organisms in carcinoma of the stomach. Direct examination of the gastric contents during gastro-entero-anastomosis showed that they were sterile in 1 out of 2 cases of active gastric ulcer and in 2 out of 5 cases of duodenal ulcer. There was an abundance of organisms in 7 cases of pyloric stenosis and carcinoma of the stomach. (2) In normal subjects removal of the gastric contents with Einhorn's tube showed that they were sterile in 2 out of 3 cases. (3) No definite relation could be established between the amount of free hydrochloric acid and the bacterial content of the stomach. (4) After gastro-entero-anastomosis the gastric flora remained unchanged for the first fifteen or twenty days after the operation. (5) The duodenal contents removed by the Eustachian tube were found to be constantly sterile in normal subjects and in 1 out of 2 duodenal ulcers. In pyloric stenosis there was a development of staphylococci in one case, and in gastric carcinoma organisms were always present. In affections of the bile ducts the duodenal cultures were sterile in 3 out of 13 cases. (6) The contents of the gall bladder in cholelithiasis, cholecystitis, and pericholecystitis were sterile in 11 out of 21 cases. (7) Comparison of the bacterial flora of the duodenum before and after cholecystectomy showed that the duodenal fluid was sterile in 23 per cent. before cholecystectomy and in 0 per cent. after the operation. (8) The cores of the calculi contained in the gall bladder were sterile in 20 per cent. (9) The contents of the first loop of the jejunum were sterile in 20 per cent. (10) The organisms most frequently found were staphylococci, streptococci, *B. coli*, a coliform organism, pseudo-diphtheria bacilli, saccharomycetes, and *Oïdium albicans*. Staphylococci predominated in the stomach, and saccharomycetes and *Oïdium albicans* were usually attached to the mucosa. In the duodenum streptococci and staphylococci were present in equal amounts, and a few bacillary forms were seen. In the first loop of the jejunum coccal and bacillary forms, especially *B. coli*, were present in equal amounts. (11) The presence of the typhoid and paratyphoid bacillus in the gall bladder and duodenum is of special importance in non-pathological conditions. (12) In all the cases studied the virulence of the organisms was very slight or *nil*.

173. Early Changes in the Pancreas after Death.

G. CAMERON (*Med. Journ. of Australia*, May 31st, 1924, p. 532), from investigations into the changes occurring in the pancreas during the first eight hours after death, found that the islet cells begin to shrink, becoming less defined in outline with alterations in the nuclear staining, the acinar cells showing similar changes in less degree, and signs of the nuclear material being discharged into the cytoplasm. The earliest changes are seen in the granular cells, which are classed according to the proportion of granules and the depth with which they stain, and changes in their shape and the appearance of the nuclei. The most granular cells gradually alter into that class of cells where granules are less or no longer distinguished. Following on these changes alterations in the nuclei occur, so that the granular cells still further resemble the non-granular, and destruction of whole islet cells occurs, leaving empty spaces, while the acinar cells lose their granules more slowly, these being more resistant to autolytic and other enzymes than the islet granules. Islet granules disappear some time before nuclear changes are seen, so that they are of a very unstable character. These early *post-mortem* changes are identical with those resulting from disease, so that unless the pancreas can be examined within four hours of death its pathology must remain obscure. From these investigations it appears that the most important changes after death occur within the first eight hours, owing to the cutting off of the blood and the starting of autolysis by ferments. Zymogen granules are much more resistant to changes than other granules, and the similarity of early changes in the islets to those occurring in experimental and human diabetes is apparent.

174. Experimental Epidemic Encephalitis and Herpes.

G. AURIAT and P. E. F. SAINTE MARIE (*C. R. Soc. de Biologie*, June 13th, 1924, p. 46), as the result of their experiments on rabbits, come to the following conclusions: (1) For a long time after the acute stage of epidemic encephalitis the cerebro-spinal fluid retains its virulence, although in an attenuated form. (2) A virus of encephalitis and herpes of weak virulence, after inoculation of the rabbit's cornea, may produce chronic lesions of the brain without previous keratitis or other clinical symptoms. If, as some writers hold, the virus of encephalitis is distinct from that of herpes, the lesions in inoculated animals do not show any evidence to justify such a differentiation.

175. To Prevent Decomposition of Specimens of Urine.

T. BRANDT and R. C. STOKSTAD (*Norsk Mag. f. Laegevidenskaben*, June, 1924, p. 456) point out that when the urine of a diabetic is collected during twenty-four hours decomposition of some of its contents may stultify an analysis. Yet an analysis of only one sample of urine is unreliable, since the contents of the urine vary during the twenty-four hours. The authors have tested a variety of disinfectants, including thymol, toluol, xylol, chloroform, and mercury perchloride, and they note that several common disinfectants, such as formalin and carbolic acid, are unsuitable for this purpose because they act as reducing agents. Other disinfectants, such as thymol, might serve the desired purpose were the problem merely bacteriological, but it has been observed that with the same quantitative and qualitative bacterial contamination the rate of decomposition of various urines differs enormously. The problem is therefore physical and chemical, as well as bacteriological. The authors have found that there is practically no ammoniacal decomposition taking place in a urine with a *p*H below 5, even when the urine is kept in a thermostat for twenty-four hours. Many disinfectants being expensive as well as unreliable, it would seem wiser to abandon them in favour of simply altering the hydrogen-ion composition of the urine by the addition of a little acid, which prevents the *p*H becoming less than 5. As long ago as 1886 Müller recommended adding acids to urine to prevent bacterial decomposition, and the explanation of this process at that time was that the acid acted as a germicide. The authors consider that any acid may be used for this purpose, provided it is not nitric acid, which destroys several organic substances. Sulphuric acid and hydrochloric acid are excellent for this purpose, and about 15 c.cm. of hydrochloric acid should be added to every litre and a half of urine. The chief advantages of acids over disinfectants are that the former cost less, are readily soluble, and act with greater certainty over a short period.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

176. Blackwater Fever.

O. E. JACKSON (*South African Med. Record*, June 28th, 1924, p. 273) considers that blackwater fever should be classified among the malarias, and not as a separate disease. Examination of the theories as to its cause points to malaria as supplying the specific organism, and though quinine may precipitate an attack it is not the primary cause. Acidosis may be created by a malarial attack, and the same condition may be produced by irregular quinine taking. The presence of the malaria parasite, the response to quinine, the seasonal prevalence, the geographical distribution, the resulting debility, and the necropsy findings in both diseases point very clearly to malaria being the root cause of blackwater fever. Repeated attacks of malaria with a resulting acidosis, which is still further increased by irregular dosing with quinine, in a patient who leads a life of habitual acidaemia afford adequate explanation of the occurrence of haemoglobinuria in an otherwise ordinary malarial attack. The prophylaxis of blackwater fever is the prophylaxis of malaria, and with ordinary antimalarial precautions, the regular administration of 5 grains of quinine daily, regulation of the bowels, and care in diet and exercise for the avoidance of acidosis, the disease can be prevented, and a person who has once suffered need not necessarily be liable to a second attack, even if exposed to predisposing factors. During an attack quinine should be given intramuscularly, free action of the bowels, kidneys, liver, and skin obtained, and the acidosis corrected by the administration of sodium bicarbonate. During convalescence the patient should take quinine in gradually increasing doses up to 15 grains per diem, but in the event of haemoglobinuria appearing the quinine must be withheld for a day or two, and eliminative treatment adopted, it being realized that quinine tends to produce acidosis if the eliminative functions are impeded. Further research is needed regarding the use of transfusion, the value of kidney decapsulation for anuria, and the production of an auto-haemolyser; it is suggested that some use might be made of abrin, an antidote for haemolysis caused by poisonous fish.

177. A Simple Clinical Test in Sciatica.

E. WARBURG (*Ugeskrift for Laeger*, June 12th, 1924, p. 465) describes a phenomenon which he has invariably observed in twenty-five cases of sciatica investigated during the past year. The affected limb is flexed at the thigh while extension is maintained at the knee, the flexion being increased until pain is provoked in the hip or back of the leg. This pain ceases when the amount of flexion is reduced a little. Pain can again be excited with the limb in this position if pressure is now exerted on the tendon of the biceps in the popliteal region. The author argues that this observation is confirmatory of Helweg's teaching that sciatica is not a true neuritis but a myopathy, the result of over-exertion of the muscles concerned. The objection might be raised that the pain provoked by pressing on the tendon of the biceps muscle was due to pressure exerted on the peroneal nerve, which runs close to the tendon of the biceps. But the author has succeeded in isolating the one from the other and in showing that the tendon and muscle, but not the nerve, must be held responsible for the pain provoked. Were the pain due to pressure on the peroneal nerve, pressure under the same conditions over the tibial nerve in the middle of the popliteal space should also provoke it; but it does not do so as a rule.

178. The Heart in Secondary Syphilis.

ODA I. SAGGIORO (*Cuore e circolazione*, April, 1924, p. 137) records her observations on the heart in twenty cases of secondary syphilis. The patients were almost all young men in whom lesions of the circulatory system due to advanced age and alcoholism could be excluded. Pulse tracings in all cases were taken in the supine position. Her conclusions are as follows: (1) The syphilitic virus acts on the heart in the secondary stage of infection by producing circumscribed areas of myocarditis which are sometimes latent and then can only be discovered by careful examination. (2) Patients in this stage of infection may suffer from subjective disturbances of the circulatory system, such as extra-systoles, which are often felt by the patients themselves, tachycardia, dyspnoea of effort, and tachycardia of effort. (3) Examination of the cardiac function reveals a myocardium with feeble powers of resistance and often signs of true myocarditis, such as increase of the transverse diameter, irregular and small pulse, and dull or impure heart sounds. (4) Disturbances of innervation of the circulatory system are frequent, being due to lesions of the myocardium at the point of entrance of the terminal branches of the vagus. (5) Extra-systoles, tachycardia, palpitation, and a state of vagotonia characterized by exaggeration of the oculocardiac reflex, sometimes accompanied by vomiting and syncope, are the manifestations of this disturbance of innervation. (6) Examination of the cardiac function is best carried out by careful physical examination, Katzenstein's test (increase of blood pressure on constriction of the femoral artery indicating myocardial efficiency), and ocular compression.

179. Rheumatic Polyarthritis following Injury.

H. ZAGELOW (*Deut. med. Woch.*, June 20th, 1924, p. 846) gives an account of seven cases of traumatic rheumatic polyarthritis. He notes that the trauma need not be severe in itself, a slight, but continuous, trauma being often the determining factor in the genesis and localization of the disease. Such slight but constant injuries are those which deformities of the feet—for example, pes planus et cavus—entail. In such cases the disease spreads from one joint to another upwards, the course and prognosis of the case differing in no essentials from non-traumatic polyarthritis. In both the traumatic and the non-traumatic forms there is the characteristically erratic involvement of various joints, the endocardium is involved in a certain proportion of cases, and there is the same transition from the acute to the chronic stage. The distinction between traumatic and non-traumatic cases depends largely on the demonstration of a short interval between the injury and the onset of symptoms in a joint which should be close to, or at the site of, the trauma. The author takes for granted that germs play a decisive part in the development of traumatic rheumatic polyarthritis, but he does not venture an opinion on the exact process of infection, merely stating that cocci may already have been circulating in the blood at the time of the trauma, or may have subsequently entered the body and found a *locus minoris resistentiae* created by the trauma.

180. Treatment of General Paralysis.

A. STÄRCKE (*Nederl. Tijdschr. v. Geneesk.*, April 19th, 1924, p. 1751) describes the following method of treatment, which he considers to be as effective as inoculation of malaria and much less dangerous. An injection of ordinary boiled milk is given in the morning. The milk must not be shaken, or else clots will get into the syringe. The first dose is 40 c.cm. The injection is usually followed by a rise of temperature in the evening to between 101.2° and 104° F. After the injection the patient should walk about or be massaged for a few minutes to promote absorption of the milk. In the evening, when the temperature is raised, an intravenous injection of neosalvarsan is given, the dose ranging from 600 to 900 mg., with the result that the temperature rises still higher. If it reaches 105.8° cold packs should be applied until it falls below 104°. This procedure is repeated every week, the dose of milk being increased so that the temperature rises at least to 102.2°. When the evening temperature has reached the level of 103.6°, a dose of 50 c.cm. should prove sufficient. Large doses of potassium iodide were also given throughout the course of treatment. No symptoms of anaphylaxis were observed. Improvement may be seen at the end of a month, but if it does not occur by then the treatment is continued, a watch being kept upon the urine.

181. Granuloma Inguinale.

S. S. SCHOCHET (*Surg., Gynecol. and Obstet.*, June, 1924, p. 759) states that granuloma inguinale (chronic infectious granuloma) is not very uncommon, although often unrecognized, in temperate climates. More than sixty cases were reported during the past three years in the United States. The etiological part played by the intracellular bodies described by Donovan is uncertain, but they should be sought in all chronic ulcerations about the genitals, especially when syphilis and tubercle have been excluded as causative factors. Diagnosis from epithelioma is made microscopically; from lupus vulgaris by the confinement of granuloma inguinale to the pudendal region, by its affecting mucous as well as cutaneous surfaces, and by the absence of giant cells and caseation; from syphilis and yaws by the negative Wassermann reaction and the absence of general adenopathy. Treatment by intravenous injections of antimony derivatives is successful, but not altogether devoid of danger of antimony poisoning.

Surgery.

182. Pulmonary Complications in Gastric Surgery.

R. GRÉGOIRE (*Bull. et Mém. Soc. Nat. de Chir.*, July 12th, 1924, p. 830) reminds us that for many years there has been discussion of the best method of preventing or avoiding the pulmonary conditions which frequently complicate operations on the alimentary canal. Certain conditions seem to increase their incidence, whilst certain subjects appear predisposed to them. The author finds that patients attacked with malignant disease are more liable to their onset, being less resistant in some way. The use of general inhalation anaesthesia, either by the cooling of the alveolar air or by its effect on the vagus nerve, encourages pulmonary complications. Then there is the lack of movement and active exercise after an operation on the abdomen, whilst the action of the lungs is reduced to a minimum; all these favour local congestion and inflammation. The bacteria found in the air passages have been shown to be identical with those found inside the stomach. It appears possible, then, that during an operation these organisms may enter the divided vessels and lymphatics and pass to the lungs, where they form septic emboli. The author considers that if one can diminish the virulence of these organisms, and avoid general anaesthesia and the prone position in bed, it is possible to lessen the risk of pulmonary complications. He therefore practises gastric lavage, prior to operation, with a watery solution of iodine. He uses regional or local anaesthesia, and gets the patients up early after operation. By adopting these measures he has reduced the incidence of pulmonary complications from 21 per cent. to almost *nil*.

183. Comparison of Cholecystostomy and Cholecystectomy.

J. P. DEAVER and S. P. REIMANN (*Journ. Amer. Med. Assoc.*, June 28th, 1924, p. 2115) describe the relative value of the operations of cholecystostomy and cholecystectomy, and conclude that the latter is definitely preferable. They maintain that it is as safe as the former operation; the patient does not miss an organ which has for some time been functionless or, at any rate, impaired, and the chances of complete recovery or cure are greater, recurrences being less common and usually less serious than after cholecystostomy. Moreover, the vicious circle due to an inflamed gall bladder infecting neighbouring organs and being itself reinfected from them is abolished by the operation of cholecystectomy. They point out that two questions remain to be answered: (1) The gall bladder adds mucus to the bile; does it add anything else? (2) The gall bladder also concentrates the bile by removing what amounts to normal saline solution from it; does it remove any other substances of importance? These questions are not very significant, however, since a normal gall bladder is not removed and a diseased gall bladder has ceased to function normally—in extreme cases, at any rate. The border-line cases between the normal and slight disease require, however, to be considered, but it is doubtful whether any bad results follow the removal of the normal organ. Dilatation of the ducts, incontinence of bile, and other sequelae have followed removal, but the authors consider it extremely doubtful whether the general metabolism of the body has been affected thereby.

184. Gastric Myoma.

N. KLEIBER (*Zentralbl. f. Chir.*, June 21st, 1924, p. 1341), who records a case in a woman, aged 62, in whom the tumour was successfully removed by Bier, states that gastric myoma, which was first described in 1762, is one of the rarest tumours of the stomach. Virchow distinguished internal or submucous myoma from external or subserous myoma, according as the tumour projected into the cavity of the stomach or protruded from the wall into the peritoneal cavity. Steiner collected 21 cases which had been published up to 1898, and Hake in 1912 collected 36 more, including 3 of his own, to which Kleiber adds another 7, 4 of which were of the external variety and 3 of the internal. Females are more frequently affected than males, especially between the ages of 30 and 55. The form and size of gastric myomata vary considerably. They may be as small as a millet seed or as large as a man's head. They may be smooth, round, or elongated, or nodular in parts, solitary or multiple. Their consistence is usually hard. An internal myoma only rarely exceeds a hen's egg in size, but is usually much smaller, while an external myoma may be the size of a child's head or larger. The most frequent site for the development of the tumour is the greater curvature, from which it develops as a sessile or pedunculated growth. Its clinical appearance varies according to its situation, size, and form. The internal myoma may cause haemorrhage, as in Kleiber's case, or signs of pyloric stenosis when it is situated in the region of the pylorus. On the other hand, it may grow to an enormous size without causing any special symptoms. Usually, however, the patient complains of dragging pains in the gastric region, nausea and vomiting. While myoma is usually a benign tumour, cases have been recorded of its undergoing sarcomatous degeneration. In some instances a pure myoma may give rise to metastases, as in a case recorded by Hansemann, in which similar tumours to the gastric growth were found in the pancreas and in the retroperitoneal tissue in the appendix area. In none of the recorded cases has the diagnosis of gastric myoma been made before operation.

185. Acute Cholecystitis in Children.

GRAFF (*Zentralbl. f. Chir.*, June 7th, 1924, p. 1239), who records an illustrative case, states that only 25 cases of acute non-calculous cholecystitis have been recorded in children: 18 occurred in typhoid fever, 1 in *B. coli* infection, 1 in paratyphoid fever, 1 after suppurative appendicitis and septicaemia, and 1 after influenza, while in the rest no bacteriological examination was made. Ten cases following typhoid fever, which were not operated on, were all fatal, while of eight on whom operation was performed all but one recovered. Graff's patient was a boy, aged 5 years, who developed loss of appetite and slight gastro-intestinal disturbance after eating a banana. On the third day he complained of abdominal pain, which was localized in the region of the umbilicus. On the eighth day there was tenderness in the region of the gall bladder, with muscular resistance and dullness on percussion. The temperature was 100.4° and the pulse 110. On laparotomy a tense oedematous gall bladder was found containing thick blackish fluid. The organ was removed and subsequent recovery was uneventful. The mucous membrane of the gall bladder was much swollen and gangrenous in parts. Unfortunately no bacteriological examination was made.

186. Acute Haemorrhage due to Gastric Ulcer.

F. ERKES (*Zentralbl. f. Chir.*, July 12th, 1924, p. 1496) refers to Königsberger's and Rammstedt's recent papers (Ibid., pp. 494 and 1048), in which they recommend closure of the ulcer by sutures. Erkes formerly used Kraft's method, but latterly he has adopted that of Seidel in the treatment of both acute and chronic ulcers of the stomach or duodenum. In all cases of gastro-enterostomy he sutures and inverts the ulcer in order to prevent post-operative haemorrhage, where resection is found to be impracticable. In 3 cases of chronic ulcers with recurrent bleeding and in 2 cases of acute haemorrhage complete cure followed the operation. All five cases have been free from haemorrhage for a period of one to three years. In 19 other cases of operation for gastric or duodenal ulcer with occult haemorrhage the operation was successful in all but one, in which the sutures gave way. In this case there was severe cicatricial pyloric stenosis, but the ulcer appeared to be healed. Four days after the operation severe haemorrhage occurred. In 3 of these 19 cases a second laparotomy for other conditions became necessary a year after the original operation; in every case the site of the raw ulcer was marked by a soft linear greyish-white scar. Erkes emphasizes the importance of inversion and approximation of the healthy tissues in order to prevent risk of perforation.

187. Surgical Tuberculosis in Childhood.

S. JOHANSSON (*Svenska Läkaresällskapets Handlingar*, June 30th, 1924, p. 35) publishes an account of an investigation, conducted under the auspices of the Swedish National Association for Combating Tuberculosis, of the fate of the 407 patients treated for surgical tuberculosis in childhood in the period 1909–23 in Gothenburg. It was found that 94 of these children had died, 40 per cent. of the deaths being due to tuberculous meningitis and 22 per cent. to pulmonary tuberculosis. The author does not believe in a wholesale discarding of operative treatment in favour of more conservative measures, and he notes that in 20 out of 24 cases in which para-articular foci threatened a joint the timely operative removal of these foci was followed by recovery, the mobility of the joints being restored to normal or almost to normal. The ratio of cases given conservative treatment to those given operative treatment was 242 to 165. Conservative treatment alone was given to 65 cases of Pott's disease, 28 cases of which were operated on according to Albee's method. Only in 4 of the 80 cases of tuberculous hip disease was operative treatment undertaken. Conservative treatment alone was given in 45 out of 64 cases of tuberculosis of the knee; in the remaining 19 cases an operation was performed. Most of the cases of tuberculosis of the ankle, and all the cases of tuberculosis of the ribs, were operated on, whereas the treatment was as often operative as conservative in the case of tuberculosis of the elbow. The chief lesson of the author's paper is that conservative and operative treatment are adjuncts the one of the other, and not rivals.

Radiology and Electrology.

188. Radiography of the Mastoid in Cases of Radical Operation.

G. FERRERI (*Arch. Internat. de Laryngol., Otol. et Rhinol.*, June, 1924, p. 650) relates a case of a young man who was operated upon in a small provincial town for a long-standing otitis media with polypi in the meatus. The operation was supposed to have been a complete radical one, but later examination showed that the meatus was much stenosed, still contained polypi and pus, and there was a discharging sinus at the lower extremity of the retroauricular scar. The patient suffered from pain and headache, and a second exploration was performed. It was found that there had been merely an incision of the soft tissues and that the bone had not been interfered with. A complete radical mastoid operation was then performed, with an excellent result. The author deplores the fact that such procedures are possible, and has devised a method for estimating the amount of bone removed by operations behind the ear. He found that an *x*-ray photograph of the mastoid region was always obscured by the shadows of other parts of the skull, and it was not possible to delimit the extent of the mastoid cavity. The idea of instilling a semi-solid opaque substance into the meatus was abandoned owing to the difficulty of removing all the substance afterwards. The author's method is to soak a length of narrow ribbon gauze in a mixture of barium sulphate, gum arabic, and water which has been boiled. The gauze, previously sterilized, is dried slowly and is then ready for use. The ear and its cavity are carefully cleaned and the meatus and the mastoid cavity very carefully packed with the gauze. Radiograms are then taken in an antero-posterior and in a lateral direction. The first radiograph shows the depth of the cavity; the second shows the extent, especially backwards; and the size can be accurately gauged from the two views. This method is very useful in determining the extent of a prior operation, and distinguishes those cases in which only a Wilde's incision has been performed.

189. X-ray Treatment of Enlarged Prostate.

C. GUILBERT (*Paris méd.*, April 12th, 1924, p. 343) states that though there is no other condition in which radiotherapy is more definitely indicated than in prostatic hypertrophy, this treatment has never been so popular as in the case of fibroids or malignant growths. The rationale of *x*-ray treatment of enlarged prostate is that the condition is an adenoma frequently associated with more or less marked hyperplasia of the connective tissue. Now, according to the law of Bergonié-Tribondeau, adenoma, both in theory and practice, is very sensitive to *x* rays, so that even in adenofibroma the adenomatous tissue is always affected provided sufficient doses of *x* rays are given. Failures in the past have been due to inadequate dosage and to the intervals between applications being too long. Guilbert condemns the perineal route as being dangerous because the skin of the perineum is much more sensitive than that of other parts, and inadequate because in view of the risk of severe skin reactions sufficiently large doses cannot be employed in all cases. He therefore makes use of the method of six windows arranged round the body, systematically avoiding the perineum, with large doses amounting to 95 to 100 per cent. of the erythema dose in preference to fractional and repeated doses. This method is well supported by old persons and avoids all risk of *x*-ray dermatitis. Close collaboration between the radiologist and surgeon is required.

190. Calcified Hepatic Cyst simulating Biliary Calculi.

MASSELOT, BOUQUET, and JAUBERT DE BEAUJEU (*Journ. de Radiol. et d'Electrol.*, May, 1924, p. 212) describe a case of erroneous *x*-ray diagnosis. A man was admitted to the French Hospital at Tunis complaining of pains in the right loin and hepatic region, which were not definitely radiating in character nor was there increased tenderness on palpation. The urine was normal, the right kidney was not palpable, and there was no fever, jaundice, or splenomegaly, but the patient stated that he had lost a little weight. A skiagram of the subhepatic region showed a group of small irregular shadows in front of and below the shadow of the twelfth rib. In profile these shadows were anterior to the vertebral column, in front of the second lumbar vertebra. Several skiagrams were taken at intervals after repeated purgation; the appearances were unchanged. The skiagrams suggested either (1) a conglomeration of small biliary calculi, or (2) a large non-homogeneous stone. At the operation the gall bladder was found to be quite healthy, but on the upper surface of the right lobe of the liver, near its margin at the level of the gall bladder, there was a clear yellow hard mass. This was excised and haemorrhage was easily arrested. A calcified cavity was found containing a chalky paste in which were very hard masses; no hooklets were found. This appeared to be undoubtedly the terminal stage of some parasitic lesion (hydatid or otherwise). The authors refer to the work of Duval, Gatellier, and H. Béclère, who have described the various sources of error in skiagraphy of this region—for example, renal calculi, calcification of costal cartilages or of mesenteric glands, etc.—but calcified hydatid cyst has not been recorded previously; usually it is too large to be mistaken.

191. X-ray Examination in Genito-urinary Disease.

H. D. PODLASKY (*Urol. and Cutan. Rev.*, June, 1924, p. 331) states that in incomplete urinary findings in tuberculosis of the genito-urinary tract, where cystoscopic examinations are in the early stages admittedly indefinite, *x*-ray examination of the chest will at times reveal acute or chronic tuberculosis long before the condition is shown by microscopical examination of the urine or animal inoculation. The *x*-ray findings may in some cases be difficult to interpret, but the ease with which malignancy can be detected depends upon the form of the metastasis—that is, whether it is of the nodular or infiltrating type. Although it is a well known fact that malignant disease of the prostate gives rise to metastases in the chest as well as in the lumbar vertebrae and innominate bones, examination of the chest is frequently neglected. Podlasky therefore maintains that routine examination of the chest by *x* rays is as important in urology as the performance of a Wassermann test.

Obstetrics and Gynaecology.

192. Acute Ulceration of the Vulva.

J. E. R. MCDONAGH (*Brit. Journ. Derm. and Syph.*, July, 1924, p. 285) describes two clinical forms of acute ulceration of the vulva caused by (1) Doederlein's bacillus, and (2) Vincent's organism. Both forms commence with severe constitutional disturbances, and give rise to very painful lesions. In five cases due to Doederlein's bacillus the ulceration began with several small crater-like ulcers on the inner surfaces of the labia, from which the Gram-positive bacillus was obtained. The ulcers in this form are unaccompanied by discharge and lymphadenitis, are not preceded by erosions, do not cause great destruction of tissue, and have no characteristic odour; these points distinguish them from that form of ulceration caused by Vincent's organism, the lesions from which are characterized by the appearance on the inner surfaces of the labia of multiple erosions which coalesce to form ulcers, with rapid destruction of tissue, accompanied by considerable discharge and characteristic smell, the inguinal glands being generally swollen and tender. From the lesions a Gram-positive fusiform bacillus associated with a Gram-negative spirochaete can be obtained. The latter (Vincent's) infection is the more severe of the two forms and may cause the greatest destruction of tissue; Gram-negative micro-organisms, as a rule, set up more severe infections than Gram-positive. In neither disease is the lesion auto-inoculable, and similar lesions have not been produced in animals. In one of the cases due to Doederlein's bacillus the lesions healed under treatment with ordinary antiseptic lotions and powder, but relapsed seven months later, while in another every kind of local treatment failed until the ulcers were packed with intramine. In the form due to Vincent's organism the lesions yield to treatment with hydrogen peroxide lotion locally combined with two arsenobenzene intravenous injections, but relapses may follow further injections, pointing to the fact that the treatment acts by stimulating the patient's resistance and not by direct action upon the infecting organism.

193. Treatment of Leucorrhoea.

R. SALOMON (*Klin. Woch.*, July 15th, 1924, p. 1324) remarks that in treating patients complaining of vaginal discharge it is necessary to exclude gross disease of the vulva, vagina, uterus, and adnexa, constitutional disorders such as diabetes, and extragenital morbid conditions such as pulmonary tuberculosis. If such causes are established they require appropriate treatment; in their absence the object of treatment should be to restore normal biological conditions within the vagina. Healthy vaginal secretion is slightly acid, owing to the presence of from 0.3 to 1 per cent. of lactic acid; the acid is secreted chiefly by Doederlein's bacillus. This acidity and the presence of this bacillus are necessary for the exclusion of extraneous pathological micro-organisms. In treating leucorrhoea it is therefore wrong to give antiseptic douches or tampons. Daily instillation of lactic acid in 0.5 per cent. solution suffices in many cases within three weeks to restore normal chemical and bacteriological conditions in the vaginal secretion. The lactose preparation recommended by Loeser,

which contains living lactic acid bacilli in varying amounts, may be used. Salomon has had good results from injections of a lactic acid-producing colon bacillus; also by the simpler method of instilling in the vagina small amounts of milk which, after standing for some hours, contains the lactic acid bacillus, and often, in addition, organisms microscopically and culturally resembling Doederlein's bacillus.

191. Sterilization after Caesarean Section.

J. B. SWIFT (*Journ. Amer. Med. Assoc.*, July 19th, 1924, p. 175) discusses the obligation of the obstetrician to advise how undue risks may be avoided after Caesarean section has once been necessary. He sent a series of questions to fifty members of the American Gynecological Association and studied the records of the repeated Caesarean sections which were performed at the Boston Lying-in Hospital between the years 1916 and 1922. He correlates these findings and states his conclusions as follows. The majority of gynaecologists believe that when a Caesarean section is performed for some reason which would entail grave peril to the life of the patient in a future pregnancy, such a patient should be sterilized at that Caesarean section. No patient should be sterilized without the written consent of both herself and her husband, and no woman should be so treated at her first Caesarean section unless there are definite indications other than the possibility of a second Caesarean section. As the successive sections increase in number general opinion is in favour of suggesting, and finally urging, sterilization, and Swift believes that the maximum number of sections permissible is four. In answer to his inquiries as to the use of contraceptive measures in preference to sterilization, the majority of the replies were against contraception on the ground of its unreliability. He considers that a repeated Caesarean section is less risky than the primary one, but insists that it is the duty of the performer of a Caesarean section to consider, not only the indications for the immediate operation, but also the possibility of future pregnancies and the steps to be taken with regard to them.

195. Rectal Perforation in Ectopic Gestation.

A. SCHWARTZ, P. LUBIN, and A. AMELINE (*Paris méd.*, June 21st, 1924, p. 581) state that while numerous cases have been reported in which ancient remnants of ectopic pregnancy have been evacuated per rectum (often after suppuration) at the end of several years, acute perforation of the rectum by an early tubal gestation is relatively uncommon. In the five cases which they have found recorded, and in a sixth case which they describe, the clinical picture was the same—amenorrhoea, abdominal pain, uterine haemorrhage, and painful defaecation, followed by sudden and profuse rectal haemorrhage. Physical signs pointing to ectopic pregnancy have been clearly marked, and, in one instance, depression in the anterior wall of the rectum led to suspicion of the complication. Operative approach should be made by the abdomen: the rectum should be sutured in several layers, but a colostomy is not usually required.

Pathology.

196. Sickle-cell Anaemia.

IN our columns of December 8th, 1923 (p. 1109), we gave a description of sickle-cell anaemia based upon the *Bulletin of the Johns Hopkins Hospital*. V. P. SYDENSTRICKER (*Journ. Amer. Med. Assoc.*, July 5th, 1924, p. 12) has now collected a series of 80 cases, including ten family groups, and gives a detailed account of this anaemia, which appears to be a familial and hereditary disease, probably confined to negroes irrespective of sex. It is present and recognizable at birth, and the author is inclined to attribute it to congenital defect of the spleen and blood-forming organs, with a resulting change in the red blood cells which predisposes to haemolysis and phagocytosis. Sydenstricker believes that the disease shows itself in two phases; in the latent phase there are few symptoms and physical signs, and blood examination alone establishes the diagnosis. This phase is commoner than the active phase in the proportion of nine to one, and the two phases may occur in the same family, active disease being found in the children and grandchildren of patients with the latent phase. The symptoms of latent disease are occasional muscle and joint pains, attacks of abdominal pain, sometimes associated with nausea and vomiting, and variable weakness and dyspnoea. There may be some greenish-yellow sclerotic discoloration, general glandular enlargement, and slight enlargement of the liver; splenic enlargement is rare. In the active phase there is the very characteristic blood picture, including reduction in the red cell count to the neighbourhood of two million, with proportionate reduction in haemoglobin and marked poikilocytosis in addition to the sickle cells, which occur in large numbers. Many normoblasts occur, and many other red cells contain nuclear fragments. Marked leukocytosis is present, but otherwise the white cells show few abnormalities, the differential count not being much altered. The serum in these cases is a deep yellow and contains bilirubin. Necropsies were performed on two cases with active disease, and on three with the latent type. In active disease the spleen was very small, the pulp scanty, and Malpighian bodies barely visible, the trabeculae being large and numerous. In many of these trabeculae and in the walls of some of the vessels there were collections of greenish plates and brown granules which gave the iron reaction, and there was much dirty brown iron-free pigment throughout the organ. In the latent cases the spleen was characterized by an increased hardness, absence of visible lymphoid nodules, and a very dark red colour of the cut surface. On microscopic examination intense engorgement with blood was seen; the Malpighian bodies were small and surrounded by areas of congestion. The bone marrow in the acute cases was abundant, bright red, and perhaps thinner in consistency than normal. There was marked diminution in the fat and an increase in the leucocytes and red cells, the reticular spaces and the capillaries being filled with sickle-shaped and distorted red cells. In the chronic phase the appearance of the bone marrow was similar but less striking. The author points out the ability of pathological red cells to penetrate the reticular tissues of the bone marrow and the pulp of the spleen. In the chronic cases there was no gross change in the liver, though the cell outlines were blurred, and there was a moderate degree of lymphocyte infiltration, together with diffuse iron-free pigmentation. In the acute cases the liver was very large, its cells were more granular than normal, and poorly defined. There was a large amount of iron-free pigmentation.

197. Achlorhydria in Pernicious Anaemia.

M. E. SHAW (*Quart. Journ. of Med.*, July, 1924, p. 319) considers that it has been established that absence of free hydrochloric acid from the gastric juice is a constant feature of Addison's (pernicious) anaemia. From examinations of the gastric juice in 7 cases of pernicious anaemia, and estimation of the amount of hydrochloric acid required to reach the acid point, the author has been able to measure the degree of achlorhydria. In 5 cases of pernicious anaemia dilute hydrochloric acid was administered, made up into a palatable drink with lemon juice, sugar, and water, and the effect determined. Theoretical considerations based upon the estimation of the degree of achlorhydria suggested that about 2 drachms of dilute hydrochloric acid (*B.P.*) would remedy the deficiency. Experimental evidence showed that 1/2 to 2½ drachms restored the effective germicidal activity of the gastric juice in pernicious anaemia if given by the "continuous" method. A. F. Hurst considers that the achlorhydria of pernicious anaemia is the primary defect, and that it permits the passage of organisms into the intestinal tract, where the toxins of the disease are formed and absorbed. The object of treatment, according to this view, must be to restore the lost germicidal power of the gastric juice by remedying the lack of hydrochloric acid.

198. Mode of Action of Stomachics.

A. O. HANNEBORG (*Norsk Mag. f. Laegevidenskaben*, June, 1924, p. 369) has carried out investigations on healthy medical students given test meals in the morning on an empty stomach. The various meals were removed with a stomach tube at short intervals, and the substances tested were plain water, tea, coffee, meat extract (bouillon), tincture amara, tincture of gentian, and a decoction of condurango. Cocoa and chocolate were also given, and were found to remain in the stomach for about three hours—that is, as long as an ordinary light meal—but coffee passed through the stomach in 75 to 100 minutes, and tea in 100 to 140 minutes. Bouillon passed through the stomach more rapidly, taking only 70 to 90 minutes to do so. Experiments with coffee from which the caffeine had been extracted suggested that it must be the caffeine on which the digestive action of coffee depends. With regard to the stage at which the stomach passes on its contents through the pylorus, it would seem that this emptying process is independent of the secretion of hydrochloric acid, which was absent from the stomach of one of the author's test subjects, and yet an ordinary test meal passed through the pylorus as rapidly as in the other cases. On the basis of this and other observations the author concludes that the main factor in the normal evacuation of the stomach is peristalsis, and his experiments with bitters such as gentian point to their action depending almost solely on their capacity to stimulate the stomach to contract more forcibly, and thus to expel, not only food, but also an accumulation of gas. Probably the role played by the gastric secretions has been much overrated in the past; anatomical obstruction and motor disturbances of nervous origin are of more importance, since either of these may prevent expulsion of the contents of the stomach.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

193. On the Use of Immune Serums.

H. B. CUSHING (*Canadian Med. Assoc. Journ.*, June, 1924, p. 477) observes that the "spectacular success" of Behring's discovery (1894) of diphtheria antitoxin led to the hope of overcoming all infections by immune serums. We now realize the limitations of this method of treatment and are gradually overcoming its difficulties. Estimation of the value of treatment in these cases is always uncertain, since all acute infections are self-limited, and other points have to be considered—for example, the beneficial effects of any foreign protein reaction. Thirty years' experience has brought to light certain underlying principles and limitations. (1) The need of a very large dosage to obtain results. The 5,000 unit dose of diphtheria antitoxin required in an average case in a child is actually enough to neutralize an amount of toxin which could kill a hundred children, but the high dose is required owing, apparently, to the difficulty of bringing toxin and antitoxin together in the body. For prophylaxis much smaller doses—for example, 500 units—suffice. (2) Concentrated serums should be used. (3) Antitoxins require time to produce their full effect. In diphtheria the maximum concentration of antitoxin does not occur for three days when it has been given subcutaneously, and when given intramuscularly two days; repeated small doses are therefore contraindicated. The intraperitoneal method is safe and easy, but the most efficient method is the intravenous, which produces greater concentration than any other and is practically instantaneous; it is especially useful in tetanus and meningitis, and would replace all others but for the mechanical difficulties in young children, and the risk of alarming rigors and other foreign protein reactions which may occur immediately. (4) It is impossible to neutralize toxins which are fixed in the tissues; no serum or special method of administration can prevent their later effects on heart, kidneys, or nervous system. Tetanus antitoxin given after the appearance of clinical symptoms rarely saves a patient. (5) Antibodies artificially introduced are rapidly eliminated from the system: some soldiers developed tetanus after the effect of an initial prophylactic dose of serum had passed away. (6) Monovalent serums may fail (especially in meningitis and pneumonia) because the disease is due to another strain of micrococcus than that from which the serum was derived. Cushing has never seen a death from anaphylaxis in fifteen years' experience; he regards the danger as negligible. Serum sickness, he adds, is not dangerous, and may be relieved by hypodermic injection of adrenaline. All serums deteriorate in storage, but less rapidly when kept in a dark, cold place. Many samples on the market are quite inert.

200. Epilepsy due to Osteitis of the Inner Table.

A. LÉRI and P. COTTENOT (*Bull. Soc. Franç. de Derm. et de Syph.*, May, 1924, p. 243) recommend that in all cases of epilepsy in which signs of syphilis are absent and serum reactions are negative skiagrams of the cranial vault should be taken. They report three cases which showed the three classic varieties of syphilitic osteitis. *Case 1.*—A girl, aged 19, had had nocturnal attacks of Jacksonian epilepsy for three or four months, sometimes occurring twice or thrice in one week. She had no sign of syphilis, and the Wassermann reaction was negative, but her mother had had several miscarriages. A skiagram of the cranial vault showed a nodule on the inner table at the vertex, just to the right of the middle line—that is, over the cortical centre for the left leg, the limb in which the premonitory symptoms commenced. This was recognized as a gumma, which disappeared, save for a slight thickening of the inner table, after a series of bismuth injections. The patient had one slight attack fifteen days after commencement of treatment; no further attacks occurred during eight months. *Case 2.*—A woman, aged 39, had had attacks of vertigo, tinnitus, and amblyopia, with transient hemianopsia, and coloured scintillating scotomata. The fundi were normal. The patient had had two healthy children; there were no signs of syphilis, and the Wassermann reaction was negative. Bismuth injections were given, and all symptoms disappeared rapidly. After some time there was a relapse and a transient paresis of the left leg, which suggested a cortical lesion. Skiagrams showed extensive destruction of the inner table and of the diploë, especially over the right motor area. In front of the bregma there was a long projecting irregular hyperostosis. *Case 3.*—A woman, aged 34, had an attack of Jacksonian epilepsy at the age of 12. Subsequent attacks continued for four years, and then ceased until the age of 25. During the last four years they had been much more frequent. The patient had no signs of syphilis, the Wassermann reaction was negative, and the cerebrospinal fluid contained 2.8 lymphocytes per cubic millimetre. A skiagram showed a large exostosis 5 to 6 cm. in length in the frontal region, irregularly nodular, projecting 1.5 cm. inwards. The authors observe that bony lesions of these three types—(*a*) gumma, (*b*) necrosis, and (*c*) exostosis—are found in both acquired and hereditary syphilis.

201. Gangrene following Subcutaneous Injection of Saline Solution.

E. EICK (*Deut. Zeit. f. Chir.*, May, 1924, p. 410) states that, unlike transfusion of blood, which has a very old history, injection of saline solution is of comparatively recent date. It was chiefly during the great epidemics of cholera that visited Europe in the nineteenth century that it occurred to many physicians that fresh fluid might be introduced into the dehydrated system by a parenteral route. Intravenous injection of saline solution was recorded by Hermann in Germany in 1830 and by Latta in Scotland in 1832, but the method gradually became forgotten, and it was not until about fifty years later that it became popular as the result of the investigations of Worm-Müller, Cohnheim, Goltz, and von Ott. In 1883, after successful experiments in animals, von Ott performed the first subcutaneous injection of saline solution in a man, who was suffering from cholera nostras. In the cholera epidemic at Hamburg in 1892 subcutaneous injections of saline were extensively employed. Müller in 1920 collected from German literature 13 cases of severe damages to the tissues following this method, and Eick has added 4 more, including two of his own, so that the total amounts to 17. The chief factors in the damage to the skin following injection of saline solution appear to be anaemia of the tissues, circulatory weakness, pressure exercised by the injected fluid, and, most of all, the addition of adrenaline, which should therefore not be used at all, or be given intravenously or by mouth.

202. Glycerin as a Vehicle for Bismuth Injections.

S. LOMHOLT (*Ugeskrift for Laeger*, July 24th, 1924, p. 569) finds that with the growing popularity of intramuscular injections of bismuth in the treatment of syphilis a better vehicle than oil is desirable. Most bismuth preparations for intramuscular injection at present on the market are oily emulsions which, though more readily absorbed than liquid paraffin, are yet slowly assimilated. He found that the following formula gave excellent results: precipitated bismuth hydroxide 2½ drachms, glycerin 1½ drachms, distilled water to 14 drachms. From 16 to 24 or 32 minims should be given every week and the syringe be cleaned frequently, since the bismuth is apt to make the piston stick in the syringe. The needles also must be cleaned directly after use, or they will be blocked. The emulsion should be well shaken up immediately before use, and as it is only slightly hypertonic the injections are practically painless. Though he has already given several hundred injections, the author has not yet had a case in which pain led the patient to discontinue treatment. It is, however, inevitable that this glycerin emulsion must cause a little more pain than an oil emulsion, for the former is absorbed several times more rapidly than the latter. There is little risk of a glycerin emulsion giving rise to a depot of bismuth at the site of injection; the action of the glycerin emulsion is much more rapid and powerful than that of an oil emulsion.

203. Renal Diabetes.

M. LABBÉ (*Paris méd.*, May 3rd, 1924, p. 417), who records four personal cases, states that excessive permeability of the kidney to glucose was first described in 1895 by Lépine, who, from observations of the association of marked glycosuria with only a slight hyperglycaemia, came to the conclusion that there was a renal factor in the mechanism of glycosuria. The following year Klemperer gave the name of "renal diabetes" to cases of glycosuria due to hyperpermeability of the kidney without hyperglycaemia. Renal diabetes, though not frequent, is not extremely rare. Salomon, indeed, who proposed the term "diabetes innocens," regards it as very common, and H. John found it in 13.8 per cent. of all cases of glycosuria. The amount of sugar in the urine is usually moderate, ranging from 10 to 20 grams a day, but is sometimes as low as 3 grams or as high as 79 or 100 grams. Renal diabetes is not accompanied by symptoms of hyperglycaemia, such as polydipsia, polyuria, gingivitis, or a tendency to

suppuration, as in true diabetes. It is generally persistent, but sometimes it is absent in the fasting state and appears only after meals. An important characteristic is that diet has no effect upon the glycosuria, as in true diabetes. Hyperpermeability of the kidney is not the only disturbance of kidney function in renal diabetes. In a large number of cases albuminuria is present, as well as impermeability of the kidney to phenolsulphonephthalein. Disturbance of hepatic function is also frequently associated with renal diabetes, as is shown by the occurrence of acidosis and urobilinuria. In rare cases renal diabetes is associated with true diabetes. Renal diabetes is occasionally found in several members of the same family, like alkaptonuria and cystinuria. In cases reported by Cammidge and by Graham the father and daughter were affected. In ten of Salomon's cases five belonged to two families. Salomon has also seen renal diabetes in a brother and sister, and Labbé has seen it in two brothers.

Surgery.

204. Traumatic Cyst of the Pancreas.

M. H. ROUVILLOIS (*Bull. et Mém. Soc. Nat. de Chir.*, June 28th, 1924, p. 723) records an interesting case of a traumatic cyst of the pancreas. It occurred in a patient aged 21, following a violent kick in the epigastrium while playing football. The cyst formed in the lesser sac of the peritoneum and the foramen of Winslow was obliterated. The stomach lay above and the transverse colon below the cyst. The clinical features at the time of the injury did not indicate any visceral lesion, and the symptoms were simply those of a severe contusion without complications. There persisted, however, a rigidity of the rectus muscle in its upper quadrant for a week after the accident: this sign has been noted in a number of cases. It was only after an interval of a month that the local and general signs showed the presence of the cyst; following these signs the cyst underwent spontaneous rupture, but later refilled and became even larger than before. At the subsequent operation the cyst was exposed and punctured; it contained a yellowish opalescent fluid. The cyst was sutured to the abdominal wall and drained. The discharge from the wound was at first sterile, but later became infected with staphylococci. The diagnosis in this case depended on the history of injury, the situation of the pain, and the abdominal rigidity, whilst radiographic examination was of some assistance. The mode of approach through the gastro-colic omentum appears the best and most favourable for drainage. The convalescence was satisfactory except for the development of a pancreatic fistula for a time, which is common in these cases. It was noted that the quantity of fluid secreted from the fistula was greater during the night than by day.

205. Sarcoma of the Rectum.

L. DURANTE (*Il Policlinico*, Sez. Chir., June 15th, 1924, p. 311), who states that the ano-rectal localization of sarcoma is extremely rare, has collected 66 examples of melanotic sarcoma and 32 of non-pigmented sarcoma, including a personal case. The average age of the patients was 52 years; the youngest case was that of a boy, aged 10, with the non-pigmented form, and the oldest that of a man of 90 with melanotic sarcoma. Both sexes are equally affected. In the great majority of cases the melanotic form arises in the anal portion of the rectum and the non-pigmented form in the segment of the rectum above it. The walls of the ano-rectal segment are affected in the following order of frequency: posterior wall 18 cases, anterior wall 3 cases, lateral wall 10 cases (Chümann). Sarcoma of the rectum is manifested clinically as a single, well circumscribed mass, with a nodular surface, varying in size from a hazel-nut to an orange. In 30 per cent. of the melanotic cases and 70 per cent. of the non-pigmented cases it is sessile, while, on the other hand, it is pedunculated in 70 per cent. of the melanotic cases and 30 per cent. of the non-pigmented cases. In only a few instances does it first appear as a nodule beneath the intact mucous membrane, as in most cases the mucous membrane is already ulcerated when the growth is first seen. The following forms have been described: (1) Pedunculated form, to which Quénu and Hartmann have given the name of "malignant polypi." (2) Nodular form. (3) Diffuse form, which is very rare, if it exists at all. Histologically sarcoma of the rectum shows the same structure as that of sarcoma in other organs, the incidence of the different varieties being as follows: round-celled 40 per cent., spindle-celled 33 per cent., mixed-celled 20 per cent., giant-celled 1 per cent., lympho-sarcoma 4 per cent., myosarcoma 2 per cent. Contrary to what is seen in epithelial new growths, sarcoma of the rectum is hardly ever associated with an appreciable diminution of the calibre of the intestine. There is, on the contrary, often an increase in the size of the intestinal calibre due to paresis of the muscle tone. It is only in the later stage that sarcoma shows any tendency to invade the neighbouring organs, such as the bladder, vesiculae seminales, uterus, and vagina. There is a considerable difference in the clinical course of melanotic and non-pigmented sarcoma. The former shows a rapid growth with a tendency to invade early the lymphatic system, while the latter never invades the lymphatic system, except possibly at a late stage, and its growth is usually slow. The prognosis of the non-pigmented form is consequently less sombre than that of melanotic sarcoma. The methods and indications for operation are the same in sarcoma as in carcinoma of the rectum.

206. Echinococcus Disease of the Lung.

H. VERGER, F. PIÉCHAUD, and E. AUBERTIN (*Paris méd.*, June 14th, 1924, p. 551) describe the following varieties of echinococcus disease of the lung: (1) The pseudo-tuberculous form, in which the auscultation signs are localized congestion, paroxysmal cough, fever, emaciation, asthenia, and early or late haemoptysis. (2) The pseudo-pleuritic form, simulating sero-fibrinous pleurisy, in which the cysts are situated in the cortex of the lung. (3) The pleuritic form, due to rupture of the cyst into the pleura, or more frequently due to a pleural effusion caused by irritation of the pleura by the cyst. (4) The type of intrathoracic tumour, in which the cyst projects from the thorax owing to the rib covering it being pushed forwards. (5) The suppurating cyst; in this form the symptoms are those of pulmonary abscess. If the suppuration is secondary to the expulsion of clear fluid and fragments of membrane the diagnosis is easy, but if suppuration is the first sign the diagnosis is difficult unless characteristic hooklets and fragments of membrane are found in the pus. If an operation is not performed cachexia develops. The authors, who record a case of this kind in a woman aged 30, which was successfully treated by operation, emphasize the importance of the early use of *x* rays, as the radiological picture of this condition is characteristic.

207. Surgical Treatment of Goitre.

A. S. JACKSON (*Annals of Surgery*, June, 1924, p. 840) records conclusions based on a study of 4,000 cases of goitre. Colloid goitres appearing at puberty are seen in 60 per cent. of girls between the ages of 16 and 20 in the goitre district of the Middle West of America. Factors in the etiology are deficiency of iodine, excessive demand on the thyroid glands, and undue mental and physical strain. Colloid goitre may be prevented by administering 10 mg. of sodium iodide once a week during school life. Iodine gave good results in the ordinary type. Adenomas tend to develop in neglected cases; they rarely cause symptoms before 25 years of age. One in every four becomes toxic before 50 years of age, and the symptoms cause permanent and serious damage to the heart and kidneys. Thyroidectomy is indicated in the majority of cases. Carcinoma occurred four times in a hundred cases. The mortality, when clinically diagnosed, was 100 per cent. Malignancy does not occur in exophthalmic cases. Jackson maintains that an adenoma is a neoplasm and a precursor of cancer, and so should be removed. Exophthalmic goitre is more common in youth and has an acute onset. Loss in weight may be rapid, and muscular asthenia is most marked in the quadriceps muscles. The average basal metabolic rate is +54 per cent. Before operation the vocal cords should be examined in all adenoma cases: partial paresis is present in one in every fifteen cases, and if one cord is paralysed care must be taken not to injure the nerve supply of the other cord. Local anaesthesia was used in 90 per cent. of cases. All haemorrhage must be carefully controlled at the operation, and, where better exposure is required, the sterno-hyoid and sterno-thyroid muscles may be divided. Fluids and digitalin are useful after the operation. *X* rays are only used in exophthalmic cases; prolonged treatment is necessary and the results are variable.

208. Suprarenal Tumours with Cerebral Symptoms.

A. DEVIC and J. DECHAUME (*Journ. de Méd. de Lyon*, July 5th, 1924, p. 397) record two interesting cases of suprarenal tumours giving rise to cerebral symptoms. The first occurred in a patient 59 years of age, the second patient was 35 years of age. From a review of the few recorded cases it appears that these primary tumours arise in the cortex of the suprarenal and in young subjects. Before the tumour itself attains any great size metastases appear in the viscera and the central nervous system. Clinically the tumours give no localizing signs of their presence, and being small cause no pressure effects on neighbouring organs. The absence of signs of disturbance of the internal secretion of the organ is always striking. Even though the growth may cause a complete change in the structure of the suprarenal, signs of acute insufficiency of the secretion are absent. There was no evidence of Addison's syndrome in their cases. Even the marked asthenia, rapid cachexia, and lumbar pain were

not noted. In such cases the disease is first recognized by the presence of the secondary deposits. Frequently metastases in the lungs are the earliest discovered. Following on this the cerebral symptoms may be attributed to a tuberculoma secondary to a lung infection, to which it bears some resemblance. Finally the cervical glands may become enlarged, and examination of one of these shows the nature of the growth. In one of their recorded cases there was a definite Jacksonian syndrome. In the second case there were only general signs of cerebral involvement with papilloedema, headache, vertigo, and vomiting. It appears, therefore, that the diagnosis of this condition is practically impossible.

Dermatology.

209. Osteosis Cutis.

S. W. BECKER (*Arch. Derm. and Syph.*, August, 1924, p. 162) reports a case in which a hard resilient plaque containing osseous tissue developed in the scalp of a woman aged 32. The condition had been present for fourteen years, during which time mechanical irritation had given rise repeatedly to ulceration and the formation of crusts; the patient said that bone-like bodies had come out from time to time. There was no history of injury. By microscopical examination round and irregular islands of true bone with a lamellar configuration were discovered in the corium. A membrane resembling the periosteum was present; there were marrow cavities with endosteum, lacunae, and irregular and transversely radiating canaliculae. No other calcified tissue and no cartilage were present. The simultaneous occurrence in the patient of a mild generalized hypertrichosis, a keratosic naevus of the sole of the foot, and a naevus pigmentosus of the finger suggested that the osteosis might have been a naevus formation. The author provides a bibliography of ossification in the skin.

210. Hexamine Dermatitis.

H. J. CRONIN (*Journ. Amer. Med. Assoc.*, July 26th, 1924, p. 250) reports the poisoning by hexamine of sixty employees in a rubber factory, acute dermatitis of the exposed surface being the principal symptom. Hexamine was used in the vulcanization of rubber, an ounce or two being introduced into the average bath of 100 lb. or more rubber stock. The first symptoms were redness of the face and exposed parts of the arms, followed by the development of vesicles and later of oedema. Extreme itching was the chief symptom complained of, but many of the patients later developed deep infections which resisted treatment. At first sodium bicarbonate and glycerin washes were found useful in the less severe cases, but later a protective zinc ointment containing 25 per cent. crude coal tar was found to be more effective, combined with the internal administration of bromides. The disease recurred when the patients returned to work, and after various preventive measures had proved unsuccessful the hexamine process was given up.

211. Impetigo treated by Staphylococci.

FONTEYNE (*Le Scalpel*, June 7th, 1924, p. 673) has been treating with success cases of impetigo by the external application of a culture of staphylococcus. The number of cases treated was small, but they were selected for their obstinacy and chronicity; the eruption was on the head in every case. The head was washed each day with soap, and no antiseptic was used. At first the culture was applied as a moist dressing, but this became so foul in a short time that the method was abandoned and the affected parts simply washed with the medium three times a day and left open.

Obstetrics and Gynaecology.

212. Puerperal Insanity.

A. W. BOURNE (*Brit. Journ. of Obstet. and Gynaecol.*, Summer Number, 1924, p. 251) has analysed the history of 61 cases of puerperal insanity, collating the clinical notes made in lying-in homes and later in infirmaries and asylums. In nine of the cases no evidence was obtained either of predisposition to mental disease or of physical puerperal disease. Of these patients five were single, so that it was possible that the worry of illegitimate pregnancy might be of etiological moment—a view which was borne out by the finding that no fewer than 36 per cent. of the whole series were unmarried. Of the 61 patients, 18 showed evidence of uterine infection and 9 had eclampsia. Primiparae formed 59 per cent. of the total. In 27 per cent. predisposition to mental disease was indicated by the family or personal history. The mortality in the series was 22 per cent.; 6 patients died of the effects of infection, 2 of cardiac failure, and 2 by suicide. Of the survivors who were traced, 75 per cent. were eventually discharged from asylum as "recovered." The 6 patients with eclampsia that were traced had all recovered, but of 13 cases of uterine infection 6 died. The time before recovery varied from two weeks to three years, the average time being six and a half months. Bourne concludes that there is evidence that puerperal organic disease, particularly sepsis and eclampsia, is capable of inducing insanity in those who have not shown previous indications of mental weakness and whose family history in this connexion is good. The prognosis, he says, depends primarily on the severity of the coincident organic disease, if any; eclampsia produces only a brief period of insanity, but half the patients who died were victims of infection, and of the traced cases of infection the same proportion was fatal.

213. Sarcoma and Adenocarcinoma in the same Uterus.

T. S. MOISE (*Surg., Gynecol. and Obstet.*, July, 1924, p. 83) reports a case of the occurrence of sarcoma and carcinoma in the uterus of a patient aged 60, who was admitted to hospital with vaginal haemorrhage. She had married at the age of 19, and had given birth to four children. She had had no miscarriages. The menopause occurred at the age of 50; two years later she had a fall, after which she complained of a heavy sensation in the pelvis and noticed that the uterus was prolapsed. Eighteen months later her health became poor, she lost weight, and the haemorrhage commenced. A diagnosis of carcinoma of the cervix was made and the uterus was removed, no metastases being detected. For three or four weeks after the operation the patient was quite comfortable, then hard lumps developed between the operation incision, there was severe pain in the back, and difficulty in defaecation. She became steadily weaker and developed a cough, with blood-stained sputum, tightness in the chest, and difficulty in breathing. Death followed a week or two later. The pathological examination of the uterus brought to light typical round-celled sarcoma of the body of the uterus, associated with an adenocarcinoma, which was atypical, being spread in the form of small papillae over the endometrium. There was widespread invasion of the uterine wall by nests of carcinomatous cells. Moise discusses this condition at length and refers to Herxheimer's researches and conclusions with regard to its origin. He adds that the majority of authors appear to believe that the sarcoma is the older growth, and that the carcinoma develops as the result of epithelial proliferation over the sarcoma.

214. Uterine Haemorrhage after the Menopause.

P. MONTLONGUET-POLÉRIS (*Gynécol. et Obstét.*, 1924, ix, 6, p. 493), without combating the accepted view that metrorrhagia appearing several years after a well established menopause is in a large percentage of cases symptomatic of carcinoma of the corpus uteri, points out that it may be due in other instances to senile metritis, polypi, tertiary syphilis, or to neoplasms, or cysts of the ovary. Of post-menopausal haemorrhage due to the last named cause he cites 52 cases, of which 26 had not hitherto been published. Uterine haemorrhage is by no means an invariable accompaniment of ovarian tumours or cysts developing after the menopause, but was found in one-fourth of a series of 74 cases. The bleeding is not usually acute or so severe as to produce a notable degree of secondary anaemia, possibly because the patient as a rule seeks treatment on a comparatively early date. There is not infrequently a considerable amount of leucorrhoea. Painful uterine contractions, such as occur in cancer, are not noted. Physical examination may or may not lead to detection of an adnexal swelling; this may be very small. The ovarian tumour is not in the majority of cases malignant; the series of cases reported included mucous, Wolffian, serous and vegetating cysts, fibromata, and all varieties of solid malignant growths. On examining the uterus in these cases the author has generally found evidence of endometrial hyperplasia which may go on to polyp formation, but without any formation of decidua-like cells. Clinical diagnosis of these cases is difficult, especially when the ovarian tumour is small; it is usually to be made after surgical intervention for suspected carcinoma of the uterine body. The author regards the endometrial changes as a rejuvenescence probably under the influence of stimulation of the juxtaovarian and broad ligament nerve fibres.

215. Hyperemesis Gravidarum.

S. BRINDEAU and P. LANTUÉJOUL (*Paris méd.*, June 21st, 1924, p. 587) remark that the results of empirical treatment of hyperemesis gravidarum are neither better nor worse than those of treatments based on pathological investigations. Diagnosis of the condition is less simple than is thought by obstetricians. In fatal cases the diagnosis is not certain save after autopsy; intractable vomiting in pregnant subjects has wrongly been regarded as hyperemesis gravidarum when in reality due to tabes, cerebellar granuloma, choroid plexus

tumours, or to cystic or gliomatous cerebral tumours. According to the usual statements hyperemesis gravidarum is most nearly simulated by nervous or hysterical vomiting, which is susceptible of cure by suggestion. Hysterical vomiting is not rare in those who previously have shown no neuropathic taint, and it is to be noted that the morbid conditions which it may secondarily induce—dehydration, acidosis, etc.—will naturally not respond to suggestion, and may be of extreme gravity. Patients with almost continuous vomiting, wasting, tachycardia, icterus, and salivation may be so ill that therapeutic abortion is regarded as essential, and yet they may be cured by the suggestion that they are not pregnant, or by other simple psychotherapeutic treatment. It is probable that in some such cases death has ensued. The authors believe, with others, that there is no clinical symptom which suffices to distinguish hysterical vomiting from true intractable or "toxaemic" vomiting of pregnancy. The therapeutic test is less simple than at first it seems; hysterical vomiting should yield to suggestion, but, although vomiting which does so yield is without doubt hysterical, vomiting which does not is still possibly hysterical. Suggestion varies in potency when employed by different practitioners, and is frequently useless unless the patient is absolutely isolated from her previous surroundings and friends; it is powerless against secondary morbid organic conditions following hysterical vomiting. Turning to the question, Is there such a condition as grave intractable vomiting, organic and not hysterical, due to pregnancy? the authors hesitate to state a negative, but believe that the immense majority, if not all, of these cases are of hysterical origin. They point out that grave cases are almost unknown in patients who have had skilled advice from the beginning of their symptoms, that striking cures follow the most diverse treatments and are of remarkable rapidity, that death of the foetus *in utero* and spontaneous abortion are uncommon, and that grave hysterical vomiting is far from rare in the absence of pregnancy and also in males. The authors attach the greatest importance to the institution of treatment by isolation and suggestion at the earliest possible date.

Pathology.

216. Laboratory Tests for Syphilis.

M. H. EBERT and J. H. MITCHELL (*Arch. Dermatol. and Syphilol.*, July, 1924, p. 36), from a comparative study of the Herrold precipitation test and the Wassermann test, conclude that the precipitation reaction is specific for syphilis, agreeing with the Wassermann reaction in untreated secondary and congenital syphilis, but becoming positive later than the Wassermann in untreated primary syphilis; it is less sensitive in treated cases and later in the disease. In syphilis of the central nervous system the precipitation test is unsatisfactory, as the reaction was negative in a relatively large number of cases which gave a strongly positive Wassermann reaction. Although in a small number of cases in which the Wassermann reaction is negative the precipitation test gives a positive result, it is a valuable routine control on the Wassermann test, and it is useful clinically if carefully carried out. It is unsatisfactory with lipaemic serums. A total of 2,025 tests were made, 1,075 being in syphilitic cases, 885 in non-syphilitic cases, and 65 in cases in which no history was available.

217. Pulmonary Fats and the Fixation of Calcium.

FOLLOWING on their demonstration of the presence of vitamin A in the fat contained in the lungs, and of its beneficial effect on growth, H. ROGER, L. BINET, and M. VAGLIANO (*C. R. Soc. de Biologie*, July 11th, 1924, p. 357) have now succeeded in showing that this fat contains also an antirachitic vitamin which is able to assist in the fixation of calcium by the body. Young rats, one month old, were placed on a dietary (Pappenheimer's 85) consisting of wheat flour, egg-albumen, butter, and a mixture of various salts, and were kept in the dark. After a fortnight they were found to be suffering from rickets, as was shown by a macroscopical and microscopical examination of one of them, and they were then divided into three groups. Group 1, which was kept on the same diet, was killed off at the end of another fortnight, and the animals composing it were submitted to a histological study. On the inner side, particularly, of the ribs at the costo-chondral junctions there were marked nodosities, which microscopically showed the usual lesions of experimental rickets. The animals of Group 2 were put on to a dietary in which the butter was replaced by 2 per cent. of fats extracted from the lungs of the dog by means of alcohol and ether. They were killed after a fortnight; no appreciable lesions were found at autopsy, and microscopical examination of the costo-chondral junctions showed the picture of healed rickets. The animals of Group 3 had their butter replaced by 3 per cent. of extract of lung fat, and were killed after ten days. They too showed evidence of healed rickets. The beneficial action of this fatty extract of lung could be ascribed either to the existence in it of an antirachitic vitamin or to its phosphorus content. Analysis, however, showed that the amount of phosphorus was only 1 per cent.—an amount which is insufficient to prevent or to cure rickets on this particular dietary. They therefore conclude that the fats of the lung contains over and above a vitamin requisite for growth, an antirachitic vitamin which enables the animal body to fix calcium.

218. Serology of the Streptococcus scarlatinae.

F. A. STEVENS and A. R. DOCHEZ (*Journ. Exper. Med.*, August, 1924, p. 253) have carried out an examination of the serological properties of the streptococci isolated from cases of scarlet fever. A number of strains were collected from diverse sources; with one exception they were all isolated from throat cultures; the single exception was a strain obtained from milk incriminated in an outbreak of scarlatina. Six control strains of pyogenic streptococci from infected wounds, and two others isolated from throat cultures of patients suffering from epidemic sore throat of non-scarlatinal nature were studied at the same time. Agglutinating serums were prepared to fifteen of the twenty-one scarlatinal strains by injecting rabbits first with heat-killed broth cultures, and later with living broth cultures, care being taken to exclude all animals which had natural agglutinins to streptococci in their serum. Direct agglutination tests were performed by putting up each of the immune serums obtained against both the scarlatinal and the control strains. The results showed quite clearly that with a few exceptions all the scarlatinal strains were agglutinated by all the serums, whereas the control strains were left unaffected. The serum prepared against the streptococcus isolated from milk agglutinated the scarlatinal strains as satisfactorily as did the serums prepared from strains isolated from throat cultures. Absorption tests were then performed with five of the serums, using those strains which were agglutinated with the greatest rapidity. These tests were on the whole fairly satisfactory, showing that the scarlatinal strains were able to remove the homologous agglutinins from the serums; the control strains generally succeeded in reducing the titre to a certain extent, but were never able to remove all the homologous agglutinins. From these observations they conclude that the haemolytic streptococci isolated from scarlet fever are biologically distinct from streptococci coming from other sources, and that they can be identified by agglutination tests.

219. B. putrificus and Gas Gangrene.

THE part played by *B. putrificus* in the production of foul-smelling infections has not been fully ascertained. This anaerobe has been recovered from dental caries, intestinal inflammation, and infected wounds, but attempts to reproduce these infections experimentally have not been successful hitherto. M. WEINBERG and B. GINSBOURG (*C. R. Soc. de Biologie*, July 5th, 1924, p. 339), noting that this organism only occurs in wounds associated with aerobic and anaerobic bacteria, have endeavoured to reproduce this condition experimentally by combining the organism with such organisms as *B. perfringens*, *B. sporogenes*, *B. proteus*, *B. coli*, and the bacillus of malignant oedema. The strain of *B. putrificus* employed had proved to be non-pathogenic in pure culture. When associated with *B. sporogenes*, however, and to a lesser extent with *B. putrificus* or *B. perfringens*, a very marked effect resulted from its intramuscular inoculation into guinea-pigs. The ensuing lesions were, however, nearly always limited to the skin, and only rarely did degenerative changes appear in the muscles. Partial breaking up of the muscles occurred with a mixture of *B. putrificus* and *B. histolyticus*. When other organisms were employed mixed with *B. putrificus* the lesions were less marked, more transient, and always localized in the skin. The authors suggest that these facts indicate a certain affinity of *B. putrificus* for the skin. When *B. putrificus* was associated with another proteolytic organism, such as *B. sporogenes*, marked lesions occurred, but these were very transient and the animal recovered in two to four days. When a mixture of *B. putrificus* and *B. coli* was employed the anaerobe disappeared rapidly from the wound, but *B. coli* persisted and multiplied rapidly; death followed, and the animal showed a haemorrhagic gelatinous oedema of the subcutaneous tissue over the whole abdominal wall, the viscera, especially the suprarenals, being swollen and very congested. This experiment indicates, not only the antagonism between these two microbes, which had been previously demonstrated by Bienstock, but also that this mixture increases considerably the virulence of *B. coli*. Similar results were observed in the association of *B. putrificus* with *B. proteus*. *B. putrificus* is not so strongly proteolytic as *B. sporogenes*, and breaks up protein matter slowly. It seems to play an important part in the more chronic forms of inflammation—as, for example, in wounds and in infections of the intestine.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

220. Insulin in Slight Pancreatic Insufficiency.

W. REDISCH (*Klin. Woch.*, August 12th, 1924, p. 1478) discusses the question whether the milder forms of pancreatic insufficiency should be treated with insulin. There are two objections to the use of insulin: its high price and its danger. The author maintains that the danger is less in mild cases because smaller doses of insulin are usually required; and such doses in non-diabetic individuals cause no bad effects. He thinks that the administration of the deficient hormones may stimulate the existing islet tissue of the pancreas to increased activity. Six cases of mild diabetes are recorded in which insulin treatment was given. The blood sugar diminished, and in all cases an increased food tolerance was obtained which enabled the patient to be placed on a diet corresponding in calories to the needs of the body, whilst the urine remained free from sugar and ketone bodies. The increased tolerance continued in undiminished degree for three months after the insulin treatment had been discontinued. The blood sugar also remained at the low level reached during the insulin treatment. The author believes that these results indicate the restoration of the function of the pancreas.

221. Treatment of Chronic Ulcerative Colitis.

B. B. CROHN and H. ROSENBERG (*Journ. Amer. Med. Assoc.*, August 2nd, 1924, p. 236) discuss the medical treatment of chronic ulcerative colitis based on their observation of twenty-nine cases during the last three years. They find rest in bed essential in all acute forms of the disease, and in all chronic cases in which there is recrudescence of symptoms. They obtained no success from restricting the diet, and see no disadvantage in a general and rather full diet provided that fruits and vegetables with high cellulose contents are removed. The application of heat in the form of hot packs or baking by means of electric light appliances over the colon gives some symptomatic relief. Large doses of bismuth subcarbonate gave relief from the diarrhoea, but they prefer for this purpose opium in small doses by the mouth or by suppository. Local treatment of the colon is strongly recommended, and silver salts, potassium permanganate, zinc sulphate, and iodine have all been found useful. During the last two years, however, they have been using an aqueous solution of neutral acriflavine with most satisfactory results. They start with a dilution of 1 in 4,000 aqueous or saline solution, and they find that the best results are obtained by beginning with an enema of 20 to 30 oz. of the solution twice a day, the enema being retained each time for ten to twenty minutes. The symptoms usually abate within the first or second week; the authors then reduce the treatment to once daily, increasing the strength of the solution to 1 in 3,500, and a few days later to 1 in 3,000, which is found to be the greatest strength required. The treatment is continued until the temperature is normal and the diarrhoea has ceased. They administer the acriflavine subsequently on alternate days, using a 0.5 per cent. solution of sodium bicarbonate on the intervening days to intensify the antiseptic action of the acriflavine.

222. Disturbance of Cystin Metabolism in Children.

G. O. E. LIGNAC (*Nederl. Tijdschr. v. Geneesk.*, June 28th, 1924, p. 2987), who records two personal cases in children aged 3 and 2 years respectively, has found only one similar case of disturbance of cystin metabolism reported by Kaufmann in a child of 21 months, and in all three extensive deposits of cystin were found in the organs after death, cystin crystals being present in the lungs, spleen, liver, kidneys, mesenteric glands, and choroid plexus. Control examination of the organs of nine children who had died of various diseases did not reveal any trace of cystin. The most striking features in the three cases were the defective physical development, which in Lignac's two patients had been present since birth, and was in contrast with their completely normal mental development. The first of his two patients showed considerable improvement of the general condition under treatment by insulin, although the weight remained the same, the insulin having apparently no effect on the cystin. All three children died of progressive atrophy, which in one case was accompanied by disturbance of the carbohydrate metabolism, and in the other by signs of severe infection such as pyelitis, nephritis, and otitis media.

223. Autogenous Coli Vaccines in Mucous Colitis.

S. WENT (*Deut. med. Woch.*, May 16th, 1924, p. 632) contrasts the pessimism usually shown concerning the prognosis for mucous colitis with his own optimism, which is the outcome of treating nine cases with vaccines made from cultures of coliform bacilli cultivated from the stools. In every case complete recovery was effected, although the duration of treatment was only about a week. In five of the nine cases streptococci were also found in the stools, but as they were not pathogenic to certain animals, and as they could still be found after complete recovery had been effected, not disappearing entirely till several days, or even weeks, later, it is doubtful if these germs—Günther's bacteria—play any important part in the disease. The vaccine given by the author was prepared from a two days old culture, killed at a temperature of 56°, a suspension in saline solution being made, of which 0.5 c.cm. was injected subcutaneously on the first occasion. Two days later 1 c.cm. and after another two days 2 c.cm. were injected. The symptoms disappeared completely after the second injection, but the reaction was very severe. From four to five hours after the second injection there was a rise of temperature to 102° F. and even to 104°, the fever being accompanied by headache and loss of appetite, and the site of the injection becoming hyperaemic, oedematous, and painful. Rigors were also common, and it was not till two or three days after the third injection that the patients recovered from this violent reaction.

224. Treatment of Myeloid Leukaemia with Thorium X.

E. J. FEILCHENFELD and A. PETERS (*Klin. Woch.*, August 5th, 1924, p. 1449) record a case of myeloid leukaemia, in which the symptoms and blood changes disappeared under treatment with thorium *x*. The case must be regarded as either an instance of the curative action of thorium *x*, or a very remarkable coincidence of a spontaneous remission of the disease with a course of treatment. The patient, a woman aged 30, had well marked myeloid leukaemia, and was under observation for nine months. The spleen extended down to the iliac crest, and the blood changes were typical. After a short course of treatment with arsenic without result, thorium *x* was given in the form of intravenous injections, commencing with 50 electrostatic units and increasing the amount. The blood condition soon became normal, and the treatment was discontinued. A relapse occurred, and the thorium *x* was then given in larger quantities, and continued periodically. During the nine months' treatment 8,000 electrostatic units were given. The general condition improved, the blood became normal, and the enlargement of the spleen disappeared. The authors add that the dose of thorium *x* must be found experimentally in each case—the blood condition is an indication of the amount required; toxic effects are thus avoided. Prolonged observation is necessary.

225. Contraindications of Digitalis.

E. BORDET and J. YACOEL (*Arch. Mal. du Coeur, des Vaisseaux et du Sang*, June, 1924, p. 335) observe that in some cases of heart disease digitalis may cease to relieve the patient and may even become dangerous. They report three cases. *Case 1.*—A male, aged 49, with serious cardiac dilatation and frequent crises of angina pectoris. There was a history of syphilis at the age of 20, for which he had received three courses of grey oil and one of arsenobenzol; the Wassermann reaction was positive. He was very pale and dyspnoeic, complained of retrosternal pain on slight effort, and of many severe anginal attacks on lying down. There was a loud "double aortic" bruit, and the systolic blood pressure was 175 mm. Hg. There was some hypostatic congestion, the liver was palpable and painful, and the urine was abundant, containing a trace of albumin. The heart, especially the left ventricle, was much hypertrophied and dilated. After bleeding and purgation he received daily intravenous injections of ouabaine; after the second the anginal attacks improved and disappeared later, but returned twenty days subsequently. Digitalis was then administered, but the patient's condition was definitely made worse. The anginal attacks became more frequent and severe, dyspnoea increased, and skiagrams showed an extension of the dilatation. On substituting ouabaine for digitalis the patient's condition improved immediately, but he relapsed when digitalis was given again. *Case 2.*—Male, aged 57, with dyspnoea, precordial pain, left amblyopia, due to numerous retinal haemorrhages, and a positive Wassermann reaction. The systolic blood pressure was 280 mm.,

the diastolic 150 mm. Hg. The aortic sound was loud and clanging and there were signs of cardiac dilatation. He received intravenous injections of ouabaine which gave speedy relief; after three months digitalis was given in conjunction with ouabaine; this was well tolerated at first, but later its administration was followed by precordial pain and distress. *Case 3.*—Male, aged 40, suffered from anginal crises on slight effort, dyspnoea, and occipital headache. The Wassermann test was positive; the systolic blood pressure was 240 mm. and the diastolic 130 mm. Hg. There was slight albuminuria. The symptoms were immediately relieved by ouabaine (as in the preceding cases), but they were aggravated by digitalis. Bordet and Yacoel agree with Vaquez that "ouabaine is a systolic remedy, digitalis is a diastolic one"—that is, the former acts especially during systole, stimulating the stretched weakened muscle fibres, while the latter, by increasing the length of diastole in slowing the rhythm, accentuates the features of the diastolic phase, and gives rise to an increased distension of all the cavities of the heart.

Surgery.

226. Ileo-colic Volvulus due to Congenital Malformation.

KARL BRAEUNIG (*Deut. Zeit. f. Chir.*, July, 1924, p. 284) describes in detail a very unusual condition found at operation. A previously healthy man, aged 21, had had acute strangulation for two days. An immediate laparotomy revealed a volvulus of the greater part of the small intestine and of the ascending colon, which had rotated clockwise through 360 degrees. The transverse colon lay behind the duodenum; the caecum and ascending colon were gangrenous and were resected. The patient died twenty-four hours after the operation. The stomach was small and both curvatures were unusually shallow; the pylorus and duodenum were attached to the vertebral column by a short, thick mesentery, behind which the transverse colon lay. The splenic flexure and descending colon formed a series of U-shaped loops, but were otherwise normal. Braeunig discusses the mechanism of this unusual abnormality; he believes that it is due to displacement of the ileum and caecum, produced by persistence of the omphalo-enteric duct, which retards the normal development and descent of the ileum, this in turn producing a backward rotation of the caecum and ascending colon.

227. Duodenal Ileus.

M. A. BRÉCHOT (*Bull. et Mém. Soc. Nat. de Chir.*, July 5th, 1924, p. 769), reporting two cases observed by M. A. Charrier, draws attention to duodenal ileus due to compression of the mesentery. Such cases are comparatively rare, and the condition has been recognized as somewhat akin to the acute dilatation of the stomach and duodenum sometimes seen after operation. In his cases the compression was caused by the mesenteric vessels, and resulted in the symptoms of subacute duodenal dilatation. In the first case symptoms had been present for a long time, with indefinite epigastric and umbilical pain and pain in the right iliac fossa. In the second case there were attacks of acute abdominal pain and vomiting, with intervals of complete absence of symptoms. The typical case may show attacks of periumbilical pain and profuse bilious vomiting; often there is epigastric distension, and peristaltic movements can be detected in this region. There may be no pain between the attacks. It is said that duodeno-jejunostomy is the operation of choice for this condition; gastro-enterostomy does not appear to act satisfactorily with the dilated duodenum. The duodeno-jejunostomy may be done through the mesocolon, and some add a jejuno-jejunostomy in the loop that is anastomosed. Most surgeons appear to have performed the anastomosis below the mesocolon. Bréchot points out that this is not enough in all cases, for in the second of his two cases the symptoms of duodenal distension recurred, and the patient was again operated upon a few days later, when it was found that the anastomotic opening was compressed by an abnormally mobile colon. The transverse colon was fixed, and the result has been satisfactory.

228. Treatment of Sprains and Dislocations.

A. SCHWARTZ (*Paris méd.*, May 31st, 1924, p. 506) maintains that sprains are the type of lesion in which immediate or almost immediate treatment by mobilization is required in order to prevent stiffness of the joint and atrophy of the muscles. In the case of the tibio-tarsal joint, if the sprain is of moderate intensity a very hot foot bath should be given daily for twenty minutes immediately after the injury, or, if the sprain is very severe, after a few days' rest; it should be followed by massage and mobilization of the joint, and lastly the application of a rather tight Velpeau's bandage. The patient should then be allowed to walk in moderation. The usual result of this "ambulatory" treatment is that a sprain of the ankle is rapidly and completely cured. In the case of traumatic hydrarthrosis of the knee wool and bandage should be applied for about a week to cause absorption of the fluid, but at the same time, from the very first, acute contraction of the muscles of the lower limb, and especially of the quadriceps, should be effected by making the patient extend the limb twice a day for ten or fifteen minutes at a time with a weight attached to his foot. At first the patient has difficulty in lifting four or even two pounds, but as soon as he can lift a given weight easily another two pounds should be added. At the end of a week the synovial fluid is usually almost completely absorbed. In the second week the wool and bandage are omitted unless there is still too much fluid left, and the patient continues the active movements and is allowed to walk a little without bending the knee. At the end of a fortnight the same movements of extension are continued, but normal walking is allowed, and as a rule traumatic hydrarthrosis is cured in three weeks. In simple traumatic haemarthrosis similar treatment is employed, but the blood contained in the synovial sac is evacuated by a trocar or by a small incision with the bistoury under the most stringent asepsis. Dislocations as a rule should be treated on the same lines, but Schwartz does not recommend immediate mobilization. Absolute rest should be enforced, though only for a short time, three days being sufficient to relieve the pain, and mobilization should then be started. This is best carried out by the patient himself, first alone and then against a certain resistance, so as to make the muscles work. Massage is often injurious and may be the cause of periostosis and hyperostosis.

229. Treatment of Elephantiasis.

G. SAMORINI (*Il Policlinico*, July 14th, 1924, p. 904) records a case of elephantiasis of the left leg in a young woman, aged 25, successfully treated by surgical measures. The leg first began to swell when the patient was 16 years old; no apparent cause could be found, and it had steadily increased in size. The patient married and had one healthy child. On admission the greatest difference in circumference between the two limbs was 5½ in.; a year after the operation this was reduced to 4/5 in. The procedure adopted was to remove at successive intervals of about a week four elliptical lines of skin and subcutaneous tissue from all four aspects of the leg, opening up the aponeurotic fascia in each case so as to allow free drainage of the lymph, the skin being sewn up without drainage. The author refers briefly to various theories (mostly unsatisfactory) as to the cause of elephantiasis, and the different methods of surgical treatment adopted.

230. Treatment of Phlebitis.

A. SCHWARTZ (*Paris méd.*, May 10th, 1924, p. 445) maintains that, though phlebitis in a limb requires an absolute and prolonged immobilization, the immobilization has an injurious effect on the limb, especially on the joints, which become stiff, and on the muscles, which undergo atrophy. Mobilization is therefore needed as soon as possible. It is usually taught that this may begin four weeks after the fall of the temperature, but it is important that the treatment should not begin until four weeks after the temperature has permanently settled. Before allowing the patient to get up gentle and progressive mobilization of the joints should be carried out for ten days by a competent masseur or by the practitioner himself. Neglect to carry out this treatment before sending the patient away to a health resort is likely to have disastrous results.

231. Fat Embolism following Fractures.

R. H. DAHL (*Tidsskrift f. d. Norske Laegeforening*, July 1st, 1924, p. 610) notes that, according to Backer Gröndahl's monograph on the subject, fat embolism of the lungs can almost invariably be demonstrated *post mortem* in cases of fractures of the bones. According to the same monograph it is very rare for fat emboli to cause clinical symptoms, and when this is the case death is the usual sequel. The author records three cases which occurred within three months of each other, and which were remarkable for the fact that, though there were definite and severe cerebral symptoms, complete recovery was effected. The clinical picture was remarkably uniform. The patients were men with fractures of the lower limbs, but without injuries to the head. Soon after the accidents these patients became drowsy and then comatose, the coma being associated after some time with great restlessness. At the same time the pulse and respirations became quicker for a few days, but there was no cyanosis or dyspnoea. No relationship could be established between the severity of the injury and the seriousness of the cardiac, pulmonary, and cerebral symptoms; indeed

the patient with the simplest fracture of the thigh showed the greatest pulmonary and cardiac embarrassment and the slightest cerebral symptoms. On the other hand, a patient with a severe compound fracture below the knee showed slight cardiac and pulmonary symptoms and severe cerebral symptoms.

Anaesthetics.

232. Anaesthesia at the Mayo Clinic.

W. R. MEEKER and MARY HINES (*Brit. Journ. Anaesthesia*, July, 1924, p. 13) review the progress of anaesthesia during the past ten years, calling attention to the closer co-operation between physician and surgeon, and the pre-operative and post-operative care, with the resulting improvement in operative prognosis and lessened anaesthesia risk. When prolonged anaesthesia with relaxation and unconsciousness is desired ether administered by the semi-open drop method is the standard anaesthesia at the Mayo Clinic on account of its reliability and general applicability, the patient being kept in the best condition for the surgeon with the use of a minimal amount of ether, there being less likelihood of acapnia and very little loss of body heat For short anaesthesias, extra-abdominal operations, and where severe shock is anticipated, or where there is marked sepsis, nitrous oxide and oxygen is useful. The present limited experience of the use of ethylene and oxygen points to certain advantages over other gas anaesthetics, but, as there is generally some amount of muscular rigidity, the addition of ether is necessary to secure relaxation in abdominal operations. Local anaesthesia may be indicated in isolated areas where the nerve trunks are easily accessible, in operations about the neck and cranium, and in hernias and pelvic operations, but its usefulness varies very much with the operation and the personality and predilection of the patient and surgeon. Much that was hoped from it has not materialized, so that it becomes questionable whether for all conditions requiring an anaesthetic other methods are not safer and more efficient. In the Mayo Clinic it is used principally in amputations and extensive operations upon the lower extremities in cases in which a general anaesthetic is contra-indicated.

233. Sacral Anaesthesia in Urology.

G. KOLISCHER, A. E. JONES, and O. G. SCHNETZER (*Urol. and Cut. Rev.*, July, 1924, p. 384) state that sacral anaesthesia was introduced in 1900 by Cathelin, who employed a 2 per cent. solution of cocaine. Novocain was used in sacral anaesthesia by Stoeckel in 1912 with success in many plastic and perineal operations, and by Lawen and Gross in the same year in pelvic operations. The present authors, from observations on 1,800 cases, most of which were made in the urological clinic of Illyes at Budapest, have come to the conclusion that sacral anaesthesia is a safe method and confers complete analgesia; the few failures which they observed were due to defects in technique. The only fatalities which have occurred have been in those cases in which the epidural sac was entered. The advantages of sacral anaesthesia are that the complications of spinal anaesthesia, such as prolonged headache, vertigo, septic meningitis, temporary paralysis of the bladder and rectum, and even death, are avoided. The method produces anaesthesia for two hours, which is sufficient for the performance of any urological operation. The low dosage of the alkaloid required, while sufficient for anaesthetic purposes, excludes the dangers of general intoxication, especially when cocaine, novocain, or procain is given with suprarenin.

234. Ethylene as an Anaesthetic.

THE comparative value of ethylene as an anaesthetic is discussed by J. S. LUNDY (*Journ. Amer. Med. Assoc.*, August 2nd, 1924, p. 350), with abstracts and anaesthesia records of illustrative cases. He finds that analgesia and anaesthesia with relaxation may be produced very quickly, and usually without cyanosis. More oxygen can be given with ethylene than with nitrous oxide, since ethylene is the more potent of the two; it is relatively safe so long as the patient's skin and blood remain pink. The chief disadvantage of ethylene anaesthesia is the inflammability of the anaesthetic agent, which is probably no greater than that of ether. The odour may be improved by adding a scent to the gas in the mixing chamber. The author adds that the after-effects are not marked: headache, nausea, and vomiting are usually mild and of short duration. The poor relaxation given by ethylene and oxygen in acute peritonitis can be overcome by the addition of a small amount of ether to the mixture. Up to May 6th ethylene had been given to two thousand patients at the Mayo Clinic, with very satisfactory results. A full bibliography is appended.

Obstetrics and Gynaecology.

235. Inoperable Uterine Cancer.

P. P. COLE (*Brit. Journ. Radiol.*, July, 1924, p. 253) discusses the treatment of inoperable cancer of the uterus by the cold cautery method and with radium. Since recurrences after radical operation almost always appear locally in the vaginal vault, only 45 per cent. developing metastases, death in the remaining 55 per cent. results from the effects of what is really a local lesion. The cold cautery method is stated to destroy cancerous tissue peripherally without destroying normal tissue; a temperature of 110° F., penetrating throughout the whole mass, is sufficient to destroy cancer cells at the periphery of the infiltration. A subumbilical incision is made, the pelvis being shut off from the abdomen by moist pads. The internal iliac artery, ovarian vessels, and round ligaments are ligated, and then, with the patient in the lithotomy position, a water-cooled vaginal speculum is inserted. Through this a cautery, the heat of which is regulated by a rheostat, is passed through the cervix until it is felt at the fundus by an assistant's hand grasping the uterus through the abdominal wound. When in position a gentle sizzling sound should be audible, while the assistant watches the position of the cautery and the amount of heat induced in the portion of tissue under treatment. This should be such as to be just bearable by the gloved hand. The fundus, cervix, and outlying areas in the broad ligaments are dealt with in turn. When the vessels cannot be tied the cautery is contraindicated and should be replaced by radium implantation, since without ligatures the danger of secondary haemorrhage is considerable. Radium treatment is indicated in cases unsuitable for the cold cautery operation when there is risk of fistula formation, when recurrence in the vaginal vault has followed a radical operation, or when the cervix left after a supravaginal hysterectomy has become involved. When possible a tube of 50 mg., enclosed in a 1 mm. silver filter, is placed in the cervical canal, and from six to ten radium needles, containing 7 or 8 mg. enclosed in a 1/2 mm. platinum filter, are plunged into the surrounding growth, the time of exposure varying from eighteen to twenty-four hours, according to dosage. Patients so treated have had life prolonged and improved in economic value; they were freed, until shortly before death, from the distressing accompaniments of advanced inoperable uterine cancer.

236. Serum Treatment of Puerperal Sepsis.

H. BAILEY (*Amer. Journ. Obstet. and Gynecol.*, June, 1924, p. 658, and July, 1924, p. 7) recommends the administration of large doses of polyvalent anti-streptococcus serum to patients suffering from severe puerperal sepsis. Of six patients so treated who had positive intrauterine cultures of *Streptococcus haemolyticus*, one died; in two of these blood cultures were sterile. Of seven patients in whom blood culture was negative and intrauterine culture either negative or not done, one died. Allusion is also made to four patients with haemolytic streptococci in the blood following abortion, similarly treated by Williams; they all recovered. Before the injections the patients were examined for hypersensitiveness, and if necessary desensitized by small increasing injections of one drop to 1 c.cm. during the course of an hour. Serum sickness appeared in three-fourths of the patients. The dose was limited to 100 c.cm. in twenty-four hours. The regular occurrence of parametritis after the injections gave the impression that the treatment tended to localize the septic process. No local treatment was employed, and the patients were kept on an open-air balcony. The mortality of roughly 15 per cent. in this series is compared with that of 60 per cent. in a series with proved bacteriaemia recently reported by Rosensohn from an adjacent source.

237. Pregnancy and the Growth of Malignant Tumours.

L. LEDERER (*Zentralbl. f. Gynak.*, June 14th, p. 1289) cites several cases to show that pregnancy has a malign effect on tumour growths. In one case symptoms pointing to intracerebral tumour appeared during the latter half of pregnancy. The patient grew rapidly worse, and when in a moribund condition was delivered by Caesarean section of a living child; the necropsy showed a sarcoma of the dura mater invading both cerebral and osseous tissue. The case is of special interest because the patient was known to have had the tumour for a considerable time. Two years previously a palliative operation had been done, and this had been followed by radiotherapy resulting in an apparent cure. During the first half of the pregnancy there were no signs of recurrence. Another case was that of a woman from whose breast a small carcinomatous lump was excised. She refused further operation and was treated by *x* rays. She then became pregnant, but abortion was induced and no recurrence has taken place during a period of six years. He quotes

Lindstedt's monograph *Does Pregnancy Predispose to Cancer Growth?* and emphasizes this author's statement that only during the years of fertility are women more liable to cancer than men of the same age. He cites another case in which a melanotic sarcoma was removed. Eighteen months later the patient became pregnant, and this was followed by rapid and fatal dissemination. On the other hand, he quotes several writers to show that pregnancy improves the prognosis in cases of uterine carcinoma. He relates the case of a woman in whom a columnar carcinoma was diagnosed in the seventh month of pregnancy with involvement of the vulva and vagina. As a palliative measure the uterus was removed, but the entire parametrium was left behind. An examination of the pelvic cavity a few weeks later showed that although there had been further spread in the vulva and vagina the parametrium was free from metastasis, and there were no enlarged glands in spite of the fact that the cervix had been entirely replaced by cancer growth. The reason why there should be during pregnancy this relatively good prognosis in cases of uterine carcinoma when there is such a bad one in carcinoma of other organs is obscure. The analogy between the blood in cancer and in pregnancy (Abderhalden), the increase in antitryptic content in maternal blood (Gräfenberg), the weakening of the general system in pregnancy on the one hand and the degree of immunity which it confers on the other, are factors insufficient in themselves to solve this problem. Finally, the question arises whether it is justifiable to interrupt pregnancy in cases where a previous operation for cancer has not entirely removed the likelihood of recurrence. In the opinion of the author the answer to this is in the affirmative.

Pathology.

238. Changes in the Rabic Virus during Adaptation to a Different Host.

C. LEVADITI, S. NICOLAU, and R. SCHOEN (*C. R. Soc. de Biologie*, July 18th, 1924, p. 423) have made a study of the changes which the rabic virus undergoes in passing from the "street virus" to the "fixed virus." This transformation is consequent on a change of host from the dog to the rabbit. These two viruses differ considerably; for instance, the "fixed virus" has a far greater affinity for the nervous system of the rabbit than has the "street virus," and is able to give rise to strictly cellular lesions; moreover, it has lost the capacity to form Negri corpuscles. If either of the two viruses be inoculated on to the scarified skin of the rabbit, each of them gives rise to rabies, but if they be injected into the subcutaneous tissue the "street virus" alone is able to give rise to rabies; the other is very much less virulent. This appears to be due to the fact that the "fixed virus," by frequent passage through the rabbit, has acquired such a neurotropic tendency that it will no longer grow in tissue of mesoblastic origin. Now, if the two viruses be mixed and injected intracerebrally in rabbits, the animals die in eight or nine days; on examination it is found that there is a complete absence of Negri corpuscles in the brain, even though they are present in abundance in control rabbits inoculated with the "street virus" only. The explanation of this, they consider, is that the "fixed virus," having a greater neurotropic tendency than the "street virus," takes possession of the nerve cells and so prevents the "street virus" from multiplying. There is, in fact, an antagonism between the two. Now, how does the transition—or "mutation," as they call it—take place? By studying seven different strains of "street virus," they found that the tendency to go through the pansporoblastic stage, terminating in the production of the Negri corpuscle, varied in individual cases. In some it was very strong, in others it was less developed. As these strains were passed through rabbit after rabbit, this tendency to give rise to Negri bodies gradually diminished till it was ultimately lost, and the "street virus" became completely changed into the "fixed virus." The rapidity with which this change took place was greater in those strains which in the first place showed the least tendency towards the formation of Negri bodies. It likewise depended on the susceptibility of the rabbit; the greater this was, and the more rapidly the disease proved fatal, the sooner did the change occur.

239. Tuberculin and the Sedimentation Rate.

TEGTMEIER (*Deut. med. Woch.*, July 18th, 1924, p. 990) believes that the rate of sedimentation of the erythrocytes after a diagnostic injection of tuberculin often throws valuable light on the patient's reaction to tuberculosis. He finds that if an injection of tuberculin is followed in a day by a definite change in the rate of sedimentation, it is most probable that the patient is suffering from active tuberculosis: changes of only 2 to 3 mm. in the rate of sedimentation are not great enough to warrant this conclusion. The test should not be undertaken three or four days before or after menstruation, which may change the rate of sedimentation by as much as 10 mm. Other factors likely to alter this rate, such as *x*-ray treatment, should also be avoided for fear of misleading findings. The change in the rate of sedimentation does not, as a rule, occur on the day after an injection of tuberculin, but on the third and fourth days. A series of injections of increasing doses of tuberculin in the same patient may be very instructive if controlled by the sedimentation test, which shows whether the patient is getting better or worse, according as the rate of sedimentation becomes slower or faster. He considers the sedimentation test a remarkably reliable guide to the dosage of tuberculin; even in the absence of a general and febrile reaction, an increased rate of sedimentation may show that the optimum dose of tuberculin has been exceeded. If this warning is ignored, and the injections are continued, they are likely to be harmful. Since taking the sedimentation test as a guide to tuberculin dosage, the author has had no injurious focal reactions. The sedimentation test also serves the useful purpose of showing the physician when he may rapidly increase the dosage of tuberculin.

240. A New Organism in Pulmonary Disease.

H. R. WAHL and R. L. HADEN (*Journ. Amer. Med. Assoc.*, June 28th, 1924, p. 1924) publish a preliminary note on an unusual organism occurring in chronic pulmonary disease, which they have detected in four cases by studying fresh unstained preparations of the sputum and by macerating in a strong solution of potassium hydroxide pulmonary lesions detected at necropsy. This organism apparently belongs to the Arthrosporiae—a suborder of fungi, which includes the trichophyton family. Its shape is pyriform or club shape, it appears to be beaded or divided by septa, and it has a diffuse brown pigmentation. It is occasionally found associated with a small round unpigmented body, with a roughened surface covered with flattened spurs. No mycelium network was detected, the organism only being found in the spore form. It probably represents a secondary infection only. Localized lesions were produced in rabbits after inoculation with the spores, and histological examination of these lesions showed a granulomatous reaction rather similar to that in actinomycosis.

241. The Pulmonary Form of Plague.

C. NICOLLE and E. GOBERT (*Archiv. de l'Inst. Pasteur de Tunis*, 1924, 13, p. 212) have made some observations on the epidemiology of plague which confirm those of previous authors. During the years 1907–22 there were several sporadic cases of plague in Tunis, all of which were of the usual bubonic type, associated with plague in rats. In 1921 Southern Tunis, which had hitherto been free from the disease, was invaded, and three small outbreaks, all of the bubonic type, occurred in different localities. In 1923 the pulmonary form of plague appeared, and during that and the following year a number of foci of the disease were recorded. A study of these foci revealed a very marked difference in the epidemiology of the pulmonary form from that of the bubonic form. Whereas the latter was constantly associated with the presence of plague in rats and was non-contagious, the former was independent of the presence of plague in rats, was highly contagious from patient to patient, and had an extremely high mortality—generally 100 per cent. From bacteriological investigations there was no doubt that the causative organism, *B. pestis*, was the same in each case; and the question was why in some outbreaks it gave rise to buboes and in others to pneumonia. Norman White has suggested that *B. pestis* is able to give rise to pneumonia only when it is associated with some other organism, an organism, incidentally, which is non-pathogenic to rodents. Following up this idea the authors put forward the hypothesis that this other organism is the filtrable virus of influenza. Their conception is that when influenza attacks people who are chronic carriers of plague it so lowers their resistance that *B. pestis*, which has hitherto lain dormant, finds itself able to invade the lung and give rise to pneumonia. This hypothesis presupposes the existence of at least two premisses: (1) that chronic carriers of plague do exist, and (2) that epidemics of pulmonary plague occur in close connexion with those of influenza. With regard to the first premiss it has been shown quite clearly that healthy men may carry *B. pestis* in their inguinal glands. With regard to the second, an examination of the records shows that during the years 1923 and 1924 in the Regency of Tunis there was a close correspondence between the presence of pulmonary plague and that of influenza. Before influenza broke out there were no cases of pneumonic plague, and as soon as it ceased the cases of plague likewise ceased to occur.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

242. Quinine in Lobar Pneumonia.

L. NICOLAYSEN (*Tidsskrift f. den Norske Laegeforening*, June 15th, 1924, p. 549) has given intramuscular injections of quinine since July, 1919, to the patients suffering from pneumonia in his hospital, which is Department VIII of the Communal Hospital in Christiania. At two other medical departments (VII and IX), which are conducted by other doctors, injections of quinine are not given for pneumonia. These two departments, therefore, served as controls, and the comparison was the more fair as all three departments admitted the same class of patient under the same conditions, with the exception of the quinine treatment. The period studied was from January 1st, 1920, to April 1st, 1923. In this period Departments VII and IX treated 254 cases of pneumonia, 58 of which terminated fatally, the mortality being 22.8 per cent. In the same period Department VIII treated 99 cases, 13 of which terminated fatally, the mortality being 13 per cent. To make the comparison more fair the author withdrew from the statistics of both groups all those patients who died within twenty-four hours of admission to hospital, and who could not, therefore, have had reasonable time in which to benefit from any treatment. The corrected figures thus obtained showed a mortality rate of 17.3 per cent. for Departments VII and IX, and only 9,4 per cent. for Department VIII. When the patients were classified according as their ages were below or above 50, it was found that the older patients did not seem to benefit greatly from the quinine, the mortality in the quinine class being 25 per cent. and in the non-quinine class 28 per cent. But below the age of 50 the mortality was only 4.2 per cent. for the quinine class, as compared with 13.9 for the non-quinine controls. The composition of the solution injected was according to Aufrecht's prescription: Quin. sulph. 0.50 gram, urethane 0.25 gram, aq. dest. 5 c.cm. This solution can be sterilized by boiling, and if a little of the quinine in this concentrated solution becomes precipitated it is only necessary to warm the solution slightly before injecting it, and the precipitate will again be dissolved. The author gives the injection into the muscles of the buttocks or thighs, and only occasionally has he seen persistent infiltration or slight necrosis ensue. The first injection is given immediately after admission to hospital, the second is given on the following day, the injections being repeated on alternate days, but not more than a total of four being given, as a rule, in each case. The author supplements this treatment with camphor, which he gives by the mouth or by subcutaneous injection.

243. Ambulant Treatment of Gastric and Duodenal Ulcer.

I. BOAS (*Deut. med. Woch.*, June 13th, 1924, p. 789) has been driven by economic stress to give his patients ambulant treatment instead of strict rest in bed for gastric or duodenal ulcer. While ambulant treatment should not be attempted for acute ulceration associated with severe haemorrhage, practically as good results were obtained in less acute stages of gastric and duodenal ulcer by ambulant treatment as by complete immobilization in bed for several weeks. But if ambulant treatment is to be successful the patient must follow a strict dietary. For the first week he should live only on slops, including milk, cream, and soups, more attention being paid to resting the stomach than to giving the normal number of calories. After the first week, if all goes well, the slops may be supplemented by soaked rusks and white bread, in the third week by mashed potatoes and stewed fruit or gruel made with flour, and in the fourth week by pulped vegetables, eggs, soft cheese, and bread-and-butter. In most cases, before each meal, sodium bicarbonate, magnesia, and extract of hyoscyamus is given. The author insists that this ambulant treatment should be controlled by examinations of the stools once or twice a week for occult blood, the persistent absence of which is a very reliable sign of healing of an ulcer.

244. Glycerin Lymph and Lanoline Lymph.

S. CUNNINGHAM and J. A. CRUICKSHANK (*Indian Journ. Med. Research*, 1924, p. 1173), as the result of an investigation at the King Institute of Preventive Medicine, Guindy, Madras, of over 1,280,000 vaccinations, of which 1,181,716 were performed with lanoline and 106,487 with untreated glycerin lymph, came to the following conclusions: (1) Untreated glycerin lymph is superior to lanoline lymph for vaccination purposes under tropical conditions similar to those found in the Madras Presidency. (2) When the conditions as to vaccination and verification are carefully controlled untreated glycerin lymph has been found to give an average case success rate of 90.9 and 88.9 per cent. (3) Under similar conditions the average case success rate and insertion success rate obtained with lanoline lymph have been found to be 70.1 and 49.1 per cent. respectively. (4) Vaccine vesicles produced with glycerin lymph are larger and in every way more typical than those produced with lanoline lymph. (5) For the ten-day period during which the keeping properties of the two types of vaccine were tested the glycerin lymph gave the better results.

245. Typhus Parotitis.

W. M. WERZBLOWSKY (*Deut. med. Woch.*, 1924, 1, p. 276) states that apart from mumps typhus fever is the only infectious disease in which non-suppurative parotitis occurs, as is shown by the following figures. During the period 1908–17, when he was in charge of the department of infectious diseases in a Government hospital in Russia, among 9,731 cases of various infectious diseases simple parotitis occurred only in typhus. Among 1,630 cases of typhus there were 48 complicated by parotitis, which was simple in 20 and suppurative in 28. Diphtheria, measles, and scarlet fever showed no tendency to give rise to parotitis at all. Among 333 cases of small-pox there were 8 cases of parotitis, which were all suppurative and occurred only in the severest forms of the disease, of which they represented a pyaemic metastasis. Among 251 cases of typhoid there were 11 cases of parotitis, which all ended in suppuration owing to a mixed infection from the mouth. In cholera, dysentery, and relapsing fever parotitis was always a late complication and always ended in suppuration. During the period 1917–22, when Werzblowsky was in charge of a military hospital, out of 2,000 cases of typhus 252 developed parotitis, which was simple in 93 and suppurative in 159. Typhus parotitis presents the following characters. In most cases it is unilateral. Of 113 cases of simple parotitis it was bilateral in 22, and of 187 cases of suppurative parotitis only 4 were bilateral. In one instance the parotitis was simple on one side and suppurative on the other. The earliest date for the appearance of simple parotitis in typhus was the sixth day and the latest two days after the temperature had become normal. In most cases the complications appeared between the eighth and eleventh days of disease, and lasted a fortnight, the shortest duration being eight days and the longest three or four weeks. According to Werzblowsky, the occurrence of suppurative parotitis in typhus has not the evil significance which it has in other infectious diseases.

246. Syphilis and Tuberculosis.

A. NADEL (*Derm. Woch.*, July 12th, 1924, p. 817) observes that the most difficult task in the treatment of syphilis is to devise effective treatment in resistant cases. Irreparable functional injury or disfigurement may result from the failure of ordinary treatment. Resistance may be due either (1) to the system becoming accustomed to arsenic or (2) to the spirochaetes becoming arsenic-proof. In other cases failure of treatment may be due to the presence of another infection. One of the most important of these is tuberculosis. Nadel describes a case of gummatous ulceration of the face in an old tuberculous subject. A butcher's assistant, aged 24, whose parents had died of tuberculosis (nine of his fifteen sisters also were dead), contracted syphilis in 1919. He had had several courses of mercuric salicylate and neosalvarsan. He developed extensive ulceration around the left inner canthus and a large ulcer over the left malar bone, and was pale and emaciated. The Wassermann reaction was strongly positive. The ulcers were septic, with undermined edges on which were telangiectases. He was given bismuth intramuscularly, and intravenous injections of neosalvarsan with fifty inunctions of mercury ointment, and the ulcers were treated with boric lotion and hydrogen peroxide. Three months later the ulceration had extended greatly and there was some necrosis of the nasal, lacrymal, and frontal bones. A skiagram of the chest showed extensive tuberculous lesions. A mixed vaccine (streptococci and staphylococci) was given, in addition to a course of salvarsan and mercury, with daily doses of potassium iodide, but the patient became worse. A large abscess appeared in the left parotid region, but the left temporo-maxillary joint escaped invasion. The pus contained *B. proteus* and *Staphylococcus albus*; no tubercle bacilli or spirochaetes were found. No improvement followed the evacuation of the abscess. The ulcers were then swabbed

with an aqueous solution of neosalvarsan. This produced rapid improvement, but was so painful that Lugol's iodine solution was substituted. Iodoform-glycerin was injected into the abscess cavity, which was also treated by quartz lamp irradiations. A year later the ulcers had healed but some cicatricial ectropion of the lower lid remained. The patient had transient albuminuria whenever mercury was administered, but nephritis did not supervene; his general condition is now satisfactory.

Surgery.

247. Oesophageal Pouches.

B. ANGLESIO (*Archiv. Ital. di Chirurgia*, July, 1924, p. 469) publishes six cases of oesophageal pouching, with radiograms, full details of the operations, and subsequent histories. About 270 cases have been recorded to date, and most of them were in the upper part of the pharyngo-oesophageal tract. Males are more often affected than females, and symptoms are rare before the age of 40. Some cases may be congenital or due to inherent weakness of that part of the oesophagus, but in the great majority of cases the chief causative factor is intrinsic or extrinsic stenosis of the first part of the oesophagus. This stenosis may be traumatic, inflammatory, or due to the pressure of a new growth. The pouch is usually single, but double pouches have been described; the size varies, the commonest site is the posterior wall of the oesophagus, and the pouch tends to grow to the left. The symptoms are those of stricture, and differ from those due to a carcinoma by their long duration and mode of onset. Soft food can often be taken when liquids are rejected. Unless the pouch is very big there are generally no external signs, and in diagnosis one has to rely on sounding and radiography. The author recommends, where possible, resection of the pouch at one sitting; in some cases of malnutrition a preliminary gastrostomy may be necessary. Invagination of the pouch involves a tedious convalescence. Of the six cases reported three were operated on with very successful results, one died of pneumonia before operation, another refused operation, and the last had a tumour pressing on the oesophagus, the diverticulum being found at the autopsy. The author gives a bibliography of some seventy references to recent literature on the subject.

248. Operation for Cancer of the Sigmoid.

C. H. MAYO and W. WALTERS (*Surg., Gynecol. and Obstet.*, July, 1924, p. 1) give a description of the two-stage Mikulicz operation for removing cancer of the sigmoid and descending colon. End-to-end or lateral anastomosis gives excellent results in selected cases where the patient is in good condition. If a primary operation is performed a tube should be passed from the anus to extend ten or twelve inches above the anastomosis; this prevents hardened masses of faeces from exerting pressure on the suture line and obviates gas distension. The operation consists in drawing the affected segment of bowel out of the abdomen after separating the mesentery and suturing the two limbs together, attaching it to the abdominal incision with the diseased part projecting beyond the skin. After waiting for adhesions to form the obstruction may be relieved by a small opening in the distended loop, and in four to eight days the entire projecting area is cut away, leaving the two ends of the colon flush with the skin. Two weeks later crushing forceps are applied to the apposed walls of the intestine and gradually tightened; this re-establishes communication, and the fistula will either close itself or can be readily closed later by a secondary extraperitoneal operation. Statistics show that of 152 cases with cancer of the sigmoid and recto-sigmoid 52 are living and well after a number of years, whilst an additional 37 had from two to seven years of post-operative life. In several cases there were loops of bowel adherent to the growth and requiring simultaneous resection. In some cases the uterus and ovaries had also to be removed on account of involvement. Where the growth is low in the sigmoid the rectum can be loosened up to the levator ani and brought up to the skin. The two-stage operation gives a lower mortality than other methods and offers a better chance of complete cure.

249. Xanthosarcoma.

B. J. C. DEN HARTOG (*Nederl. Tijdschr. v. Geneesk.*, June 7th, 1924, p. 2566), of the Pathological Laboratory of the University of Amsterdam, who records two cases, states that xanthosarcoma, of which no example has previously been published in Holland, is characterized microscopically by (1) hyaline tissue rich in cells, (2) giant cells, (3) pigment, (4) xanthoma cells, (5) vessels. On naked-eye examination the hyaline connective tissue presents a shiny greyish-white appearance, of firm consistence, and the xanthoma cells give the growth an opaque yellow or greyish-yellow colour and soft or pseudo-fluctuating consistence; when there is much pigment present the colour of the tumour is brownish-black. In almost all cases there is a formation of nodules which may be so marked as to make the growth resemble a blackberry, mulberry, or bunch of grapes. The following two characteristic features are in favour of xanthosarcoma being a tumour rather than an infective granuloma. In the first place, it can be readily shelled out from the surrounding tissue. Even after several years' duration its separation can be effected without difficulty. In the case of a granuloma, on the other hand, there are always adhesions to the surrounding tissue. Secondly, xanthosarcoma not infrequently shows a local malignancy—for instance, the skeleton, joint capsules, or tendon sheaths may be invaded. The development of xanthosarcoma is often attributed to trauma, which Rosenthal noted in 18.3 per cent. of 71 cases. In 50 cases collected by Den Hartog trauma occurred in 9, in two of which it was due to the patient's occupation; 5 of the 50 cases had recurrences. In 31 cases the tumour was situated on the arm and hand (in 16 on the right side, in 9 on the left, and in 6 the side was not stated), in 14 it was situated on the feet (in 7 on the right foot, in 4 on the left, and in 3 the side was not stated), and in 5 cases the site was not given. When the limbs are affected metastases do not occur, so that this form of tumour is relatively benign. The skin is very rarely attacked. The first of Den Hartog's cases occurred in a man aged 31, in whom the growth appeared on the left middle finger after a fall. The swelling grew very slowly, and was excised after two years' duration, when it was found to present the typical appearances of xanthosarcoma. The second case occurred in a man aged 35, in whom the growth was situated on the back of the foot, without any history of trauma. Complete recovery took place after its removal.

250. Pulsating Exophthalmos.

C. E. LOCKE, jr. (*Annals of Surgery*, July, 1924, p. 1) points out that 588 cases of pulsating exophthalmos have been described since 1809; 23 per cent. of these were spontaneous, whilst 77 per cent. were traumatic in origin. In some cases where an autopsy was obtained there was a communication between the internal carotid artery and the cavernous sinus, in others there was an aneurysm of the internal carotid or ophthalmic arteries. Of the traumatic cases 94 per cent. had an arterio-venous communication between the internal carotid and cavernous sinus. The condition is easily recognized clinically, yet it may be difficult to decide whether it is due to aneurysm or arterio-venous communication. In elderly people aneurysms are more liable to occur, whereas traumatic cases are nearly always cases of arterio-venous communication. A pulsating swelling above the inner canthus is usually seen with the arterio-venous type, and the exophthalmos is greater. The treatment includes various procedures to prevent the direct short-circuiting of arterial blood into the venous system. Three different principles have been applied: (1) production of obstruction in the afferent arteries by compression or tying; (2) obstruction to arterial blood in the veins by tying or compression of the superior ophthalmic vein; (3) promotion of clotting in both arteries and veins by rest and subcutaneous injections. The author recommends prolonged carotid compression before tying the carotid artery.

251. Unger's Operation for Pituitary Tumours.

E. UNGER (*Zentralbl. f. Chir.*, July 19th, 1924, p. 1560) observes that recent advances in clinical diagnosis of pituitary and other tumours in the region of the sella turcica have necessitated investigation of the best method of exposing this region. He performed the following operation. A woman, aged 39, had a pituitary tumour or cyst. Under local anaesthesia an incision was made down to the frontal bone three-fifths of an inch above and parallel with the supraciliary ridges: this was carried backwards on each side parallel with the zygoma, the temporal fascia and muscle on each side being divided. An osteoplastic flap was then raised, the frontal, parietal, and temporal bones being cut through from the supraciliary region to each temporal fossa, and then upwards to the vertex, a square of bone being thus raised; its attachment to the aponeurosis and hairy scalp was preserved. The dura mater was then incised along the edges of the bony division. The falx was divided between ligatures placed on the superior and inferior longitudinal sinuses. A brain retractor was now introduced into the anterior fossa and the frontal lobes were raised, the head being held in a dependent position. The pituitary region was exposed clearly, and a bluish glistening cyst was seen. The right optic nerve was very swollen, but the left nerve appeared to have escaped. After evacuation of 10 c.cm. fluid the cyst wall was partially excised, when a good view was obtained of the optic nerves and tracts, the chiasma, and the whole region of the sella turcica. The wound was closed,

and healed by first intention. In three weeks there was obvious improvement in vision, walking, and headache; this was maintained for three months, when the pressure symptoms gradually returned before death occurred.

Diseases of Children.

252. Post-encephalitic Behaviour Disturbance.

B. I. BEVERLY and M. SHERMAN (*Amer. Journ. Dis. Child.*, June, 1924, p. 565) record two cases, both of which were referred by the Juvenile Court. In the first case, a boy of 11, there was a vague history of an illness, during which he slept for most of a month and from which dated the behaviour disturbance. The boy appeared apathetic; he admitted his delinquencies, but could give no reason for them. The neurological examination was negative, and the mental age was 8½ (Stanford-Binet). Six months later the psychiatric condition was unaltered, but neurologically he presented typical signs of the post-encephalitic Parkinsonian syndrome. The second case, a boy of 15, gave no history of any illness and was normal until September, 1920, when he was referred for treatment on account of indecent exposures and incorrigibility at school. On examination his mental age was 11½; his behaviour seemed childish for this age, he was emotionally shallow and showed poor insight. The only neurological physical signs were sluggish, slightly unequal and irregular pupils, and the Wassermann test was negative. Two years later his behaviour showed no change, but his mental age was 15, he had adequate intelligence, and neurologically he was a typical case of post-encephalitic syndrome. The authors remark on the fairly constant symptomatology of this condition. There may be a history of influenza, diplopia, strabismus, or protracted somnolence, from which mental changes may date, or they may develop at any time up to several years afterwards. Personality changes occur with a definite time of onset, and the most outstanding characteristic is mental deterioration with a high mental rating by intelligence tests. The changes commonly are outbursts of temper, irresponsibility, incorrigibility, childish mannerisms, cruelty to animals and children, lying, and stealing.

253. Post-operative Retention of Urine in Children.

H. BOEMINGHAUS (*Zentralbl. f. Chir.*, June 28th, 1924, p. 1406), who records a case in a boy aged 7, states that transient retention of urine is frequent in adults after operations, especially on the pelvic organs in women, and that ischuria lasting for several days is not uncommon, being explained by a temporary disturbance of the innervation of the bladder. The younger the patient the less frequent the retention. Some authorities, indeed, maintain that it never occurs under the age of 15. Boeminghaus's patient while under medical treatment for tuberculous peritonitis suddenly developed pain in the left groin and swelling and redness of the corresponding site of the scrotum. As the spermatic cord was much thickened and very tender the possibility of its torsion was considered, and an operation was performed, when it was found that there was an extension of the peritoneal tuberculosis to the vaginal process, which was removed. The wound healed rapidly, but retention of urine lasted for four days and was only cured by induction of ethyl chloride anaesthesia, which had to be employed on three days in succession. Seven days after his discharge the boy was readmitted for erysipelas starting from the operation wound. Complete retention again occurred, and was successfully treated by ethyl chloride anaesthesia as on the previous occasions.

254. Treatment of Whooping-cough.

K. KASSOWITZ (*Wien. med. Woch.*, May 17th, 1924, p. 1022) describes the following therapeutical experiment, which illustrates the inefficacy of the various methods recommended for the treatment of whooping-cough. Twins, aged 8 months, were admitted to hospital with severe pertussis on the sixteenth day after the beginning of the cough and on about the fourth day of the paroxysmal stage. The number of attacks during the first two days was fifty-five and fifty-seven in one and fifty-six and fifty-five in the other. The children were then put in separate rooms so as to eliminate the action of suggestion, and one twin was given no drugs at all, while the other was subjected to the following treatment: (1) Sodium bromide 3 grams per diem combined with luminal 0.1 gram per diem for four days. The number of attacks was reduced by about half, while only a moderate diminution occurred in the control child. Somnolence, however, and diffuse bronchitis with a slight rise of temperature ensued, so that the treatment had to be discontinuted. (2) Injections of 1 c.cm. ether on two consecutive days, but without the slightest effect. (3) Quinine hydrochloride 0.2 gram per diem, but without any influence on the number and intensity of the attacks. (4) Parenteral protein therapy in the form of intramuscular injection of 3 c.cm. skim milk. A distinct febrile reaction ensued, but no improvement resulted. (5) Antipyrin 0.2 gram per diem was then given for three days, also without obvious effect. The number of attacks had now fallen below twenty daily, but in the untreated child they were considerably less. (6) 0.01 gram of codeine hydrochloride was given without even transient improvement. On discharge from hospital at their mother's request after seventeen days' stay both twins still had about ten attacks daily, the violence and duration of each attack being about the same as on admission. The untreated child, however, showed a distinct advantage over his brother both as regards the number and the intensity of the attacks.

Obstetrics and Gynaecology.

255. Pernicious Anaemia and Childbirth.

K. V. ÖETTINGEN (*Zentralbl. f. Gynäk.*, July 12th, 1924, p. 1506) points out that pregnancy will occasionally bring on a form of pernicious anaemia, differing from the disease usually described under that name, which is a constitutional disease progressing, with intermissions, to a fatal termination. The anaemia of childbirth attacks healthy women who recover when the aggravating cause—namely, the pregnancy—is removed or completed. It is, however, secondary in type, as indeed is any anaemia of toxic origin, since the damage to the blood-forming organs as well as to the blood cells is secondary. The author quotes the case of a woman, previously healthy, who in each of three pregnancies suffered from hyperemesis accompanied by severe anaemia, lemon-colouring of the skin, etc. The labours were uncomplicated but were all followed by fever of unknown origin. The anaemias became progressively worse during each succeeding pregnancy, although during the intervals between them the patient returned to her normal state of health. At the end of the third puerperium she was put under treatment by arsenic and blood transfusion and improved considerably.

256. Mikulicz's Drain after Wide Hysterectomy.

J.-L. FAURE (*La Gynécologie*, July, 1924, p. 409), in a communication to the Société de Chirurgie de Paris, stated that since 1920 he has inserted a Mikulicz drain in the pelvis after doing Wertheim's operation for cancer of the cervix; the mortality has been reduced from 11 per cent. previously to under 4 per cent. in seventy-six operations. He inserts on the pelvic floor a bag containing five or six gauze compresses and a gauze drain four or five metres long. The compresses are removed on the second day, and the drain on the fourth; the bag is taken out on the ninth or tenth day. If a vaginal drain has been used it is removed on the fourth day. Faure is convinced that his improved results are due to reverting to the Mikulicz drain, which was wrongly abandoned about 1900 in consequence of improvements in the technique of peritonization. He lays stress also on the importance of the operator standing on the patient's left side, and on the use of a large retractor such as Doyen's.

257. Spontaneous Rupture of Uterine Veins during Labour.

C. TENCONI (*Annali di Ostetricia e Ginecologia*, July 31st, 1924, p. 316) describes one case and discusses five from the literature, in which rupture of uterine veins during labour led to fatal intraperitoneal haemorrhage. In all these cases, as in three cases of rupture of the splenic vein towards term, the bleeding was so gradual in the early stages as to prevent diagnosis. Pain apart from that of the uterine contractions was not reported, but for several hours there was increasing abdominal distension and tenderness. The two chief conditions to be considered in differential diagnosis are rupture of the uterus and premature detachment of the normally situated placenta (accidental haemorrhage). In none of the cases of ruptured veins did the uterine contractions cease to occur regularly; the reverse is the case with uterine rupture. The absence of external bleeding is against the diagnosis either of ruptured uterus or of accidental haemorrhage (in the majority of cases); and the latter condition is associated with alterations in the shape and consistence of the uterus. In Tenconi's cases, unlike the others, varices were present in the region of the external genitalia. It is suggested that in a patient suffering during labour from abdominal distension and tenderness, with some increase in the pulse rate and dullness in the flanks, paracentesis abdomini should be performed; and that if blood is drawn off the abdomen should at once be opened.

258. Puerperal Thromboses.

G. Schaanning (*Norsk. Mag. f. Laegevidenskaben*, July, 1924, p. 505) has studied the incidence of clinically demonstrable thromboses of the lower limbs among the 9,367 maternity cases admitted to a hospital in Christiania in the six-year period 1917–22. There were fifty-seven such cases, or 0.61 per cent. of the total. The average period between confinement and the onset of symptoms of thrombosis was from fifteen to sixteen days, the shortest being three days and the longest fifty-one days. In most cases the thrombosis began between the eleventh and the eighteenth days of the puerperium. It follows that those maternity hospitals which discharge their patients on the seventh to the ninth day must keep their records of thromboses low at the cost of the patient; the author points out that his hospital's comparatively high thrombosis record is due to the fact that, even in uncomplicated cases, primiparae are not allowed to get up till the twelfth day of the puerperium, and are not discharged till the fourteenth day, multiparae being allowed to get up and to leave the hospital a day earlier than the primiparae. None of the fifty-seven patients died of embolism, but there were two deaths from pyaemia and one from pneumonia; in thirteen cases embolism occurred without fatal consequences. It was found that thrombosis was comparatively frequent among women whose confinements had been protracted and attended with excessive loss of blood. In the case of women who had lost more than 1,000 c.cm. of blood during the confinement, the incidence of thromboses was 2.92 per cent., whereas for those who had lost less than 1,000 c.cm. it was only 0.44 per cent. There seemed to be no association with the age of the patient and the number of previous confinements, and no definite relationship was established between the incidence of thromboses and of puerperal fever or mastitis.

Pathology.

259. Neurotropism in Spirochaete Strains.

J. H. Schultz (*Deut. med. Woch.*, July 4th, 1924, p. 914) gives an account of a small epidemic of syphilis which confirms the experimental work of Plaut and others who have taught that the affinity of various strains of spirochaetes for the nervous system differs greatly. While on manœuvres in 1908 four officers contracted syphilis from the same woman. One of them came of neuropathic stock, but the others belonged to perfectly healthy families. Although all four were given skilled specific treatment, all developed severe neuro-syphilis. Four years after infection the officer who came of neuropathic stock developed hemiplegia when he was 27 years old. Though vigorous treatment was given the hemiplegia remained practically stationary, and the patient developed irritability, slight dementia, and lack of staying power. The second patient developed tabes of moderate severity, and the last two died of general paralysis, the rapid progress of which could not be checked even by intralumbar injections of specific remedies. The fate of the woman who had infected these patients was not ascertained.

260. Local Immunity to the Staphylococcus and the Streptococcus.

In this article A. Besredka (*Ann. de l'Inst. Pasteur*, July, 1924, p. 565) gives a summary of his work during the past two years on local immunity to staphylococci and streptococci. If 1 c.cm. of a twenty-four-hour broth culture of a staphylococcus be injected beneath the skin of the abdomen of a guinea-pig it gives rise, after a slight delay, to a rapidly spreading oedema; the skin becomes infiltrated, turns black, and finally sloughs off, leaving a large wound, which takes a long time to heal. A quite different picture is seen in guinea-pigs which have received the day before a compress, applied to the shaven skin, of a heated broth culture of the staphylococcus. In this case there is little more than a superficial lesion, or more often a circumscribed abscess, which soon heals. Arguing that there must be some substance in the broth culture which exerted an action antagonistic to that of the staphylococcus, he began working with older cultures, and found that by filtering an eight or ten day broth culture of staphylococci he was able to obtain a body which was atoxic, thermostable, and specific; this substance he calls an "antivirus." Injected intraperitoneally, it affords no protection, but if given intradermally—or, still better, as a sheet dressing applied to the skin—it gives rise to a marked immunity to a subsequent injection of a lethal dose of the staphylococcus. The immunity thus obtained is independent of the presence of antibodies, and is of a strictly local nature. Passing on to the consideration of the streptococcus, he records experiments in which, by applying a dressing soaked in a ten-day filtrate of a broth culture of the streptococcus to the shaven skin, he was able to protect guinea-pigs against a dose of living streptococci fatal to the control animals in twenty-four hours. Other animals which were treated by a dressing soaked in serum broth alone died in the same time as the controls. The streptococcal antivirus, like that of the staphylococcus, has a distinct affinity for the skin; injected intraperitoneally, it exerts no protective effect. From these animal experiments he passed to the treatment of human patients suffering from various lesions due to the staphylococcus or streptococcus, and by making use of his principle of the creation of a local immunity by applying a dressing soaked in a filtered culture of the infecting organism to the invaded part he was able to secure some striking therapeutic results. Cases are recorded of osteomyelitis, puerperal infection, dacryocystitis, and rhino-pharyngitis—among others—in which a cure of astonishing rapidity was produced, even when the lesions were chronic and had withstood all other methods of treatment.

261. Tubercle Bacilli in the Lymphatic Glands of Healthy Children.

During the course of two years Elisabeth Prospert (*C. R. Soc. de Biologie*, July 25th, 1924, p. 542) has made 100 necropsies at children's hospitals, and has systematically removed the mesenteric and the tracheo-bronchial glands with the object of discovering how many patients harboured living tubercle bacilli in these structures. The technique of the examination consisted in reducing the glands to pulp, treating them with 4 per cent. caustic soda for three to six hours, and then planting them on to Petrof's medium. From 85 cases which were completely free from tuberculous lesions, she succeeded in isolating tubercle bacilli from the mesenteric glands six times; in three of these cases the cultures from the tracheo-bronchial glands were likewise positive. In 15 of the patients there were tuberculous lesions present—in the meninges, lungs, or glands: of these ten had mesenteric glands which appeared healthy, yet in every case the tubercle bacillus was recovered. In the remaining five cases the mesenteric glands were caseous. These results agree with those of previous workers. She considers that they support the hypothesis that in man, and in animals susceptible to tuberculosis, infection in the vast majority of cases is primarily of a lymphatic nature, originating in the absorption of tubercle bacilli from the alimentary tract.

262. Flagellar Agglutinins.

Marion L. Orcutt (*Journ. Exp. Med.*, July, 1924, p. 43), working with the bacillus of hog cholera, noticed a difference in the motility of the organisms from separate colonies, and succeeded in obtaining pure cultures of a motile and of a non-motile form. A serum was prepared against each of these types. The motile type serum agglutinated the motile culture in the form of soft, loose clumps in a dilution of 1 in 20,480, whereas it agglutinated the non-motile culture in the form of small, fine clumps to a titre of only 1 in 640. On the other hand, the non-motile type serum agglutinated both cultures to the same titre. Absorption experiments showed that the motile type absorbed all agglutinins for both cultures from both serums, while the non-motile type absorbed only agglutinins for itself from the motile type serum and all agglutinins from its own serum. As it appeared probable that the flagella were able to give rise to specific agglutinins, an attempt was made to prepare a serum against them alone. For this purpose a forty-eight hour agar culture was suspended in saline and shaken with glass beads for half an hour, and then centrifuged for one to two hours. By this means the flagella were broken off from the bacteria, which were then carried to the bottom, leaving the flagella in the supernatant fluid. This fluid was drawn off, shaken, and centrifuged again. The upper half of the fluid was drawn off and plated on agar to determine its freedom from bacilli. Microscopical examination showed the presence of masses of flagella, but no bacteria. Those supernatant fluids which were sterile were heated for half an hour at 60°–62° C., and were then used for the preparation of an immune rabbit serum. Agglutination tests made with this serum showed that the motile bacilli were brought down in a dilution of 1 in 5,120, whereas the non-motile bacilli were completely unaffected. Absorption of this serum with the non-motile type did not alter its titre. When the serum was put up against the flagella suspension a soft, delicate, rather fluffy precipitate was observed up to a dilution of 1 in 320. By filtering the flagella suspension this was demonstrated to be a true agglutination reaction, and not the result of precipitins; no reaction occurred with the filtrate. These experiments have shown that it is possible, starting from one culture, to prepare three serums—namely, against the original motile type, the non-motile type derived from it, and the separated flagella. This direct production of a flagella antiserum indicates that the flagella contain a separate specific antigen.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

263. "Spasmodic" Diphtheria.

G. W. RONALDSON (*Brit. Journ. Child. Dis.*, July–September, 1924, p. 182), who records two illustrative cases, alludes to the cases of diphtheria associated with symptoms of irritation of the nervous system which have been described by French writers under the name of "diphtérie spasmogène." The irritation may take the form of meningism or of pseudo-tetanic seizures. Previously recorded cases may be classified in three groups. The first consists of cases in which no diphtheritic membrane is found, and the clinical picture is that of an acute affection of the nervous system. Though no infective agent can be demonstrated in the cerebro-spinal fluid, diphtheria bacilli can be cultivated from the saliva, naso-pharynx, or conjunctiva. In such cases the initial diagnosis is usually cerebro-spinal meningitis, rabies, or tetanus. In several instances the symptoms rapidly subsided after injection of diphtheria antitoxin. The second group, of which Ronaldson's first case is an example, consists of cases of clinical diphtheria accompanied by spasmodic nervous symptoms. In the third group, to which Ronaldson's second case belongs, the signs of nervous irritation appear after disintegration of the false membrane. Ronaldson considers that the number of well authenticated cases on record is sufficient to warrant the statement that symptoms of nervous irritation may be met with in cases where diphtheria seems to be the only possible explanation, but maintains that further proof is necessary before we can admit a diphtheritic origin for symptoms met with in subjects who show no clinical signs of diphtheria. Commenting on this paper, M. CRITCHLEY (Ibid., p. 188), under the title of post-diphtheritic "chorea," records a case in a girl, aged 14, in whom symptoms of chorea developed after an attack of diphtheria in association with the ordinary phenomena of diphtheritic paralysis—namely, nasal voice, paresis of accommodation, and generalized polyneuritis. Recovery took place within two months. Critchley is of opinion that rheumatic chorea and polyneuritis could be excluded as well as epidemic encephalitis, and alludes to a similar case reported by Globus in a woman, aged 29, who developed choreiform movements together with myoclonus as a complication of vaginal diphtheria. Klebs-Loeffler bacilli were obtained in cultures of the cerebro-spinal fluid. There was no evidence of paralysis. Mental changes supervened and death took place. The autopsy showed definite acute inflammatory changes localized to the basal ganglia.

264. Arterial Hypertension in Acute Nephritis.

C. LIAN and J. HAGUENAU (*Arch. Mal. du Coeur, des Vaisseaux et du Sang*, August, 1924, p. 506) state that although much has been written on the cardio-vascular complications of chronic nephritis since Bright's early researches, comparatively little attention has been paid to those accompanying acute nephritis. Lian and Haguenau found in 7 soldier patients that the maximum arterial pressure was definitely increased in 6 and the minimum pressure in 5. In one case the blood pressure was only moderately high—a patient aged 20 years had a maximum pressure of 148.5 mm. Hg, with a minimum pressure of 138. He was not seen until a month after the onset of the acute nephritis, and it is probable that at the onset the blood pressure was considerably higher and had fallen progressively. None of these patients showed any signs of pre-existing chronic nephritis. In another series of observations on 11 soldiers only 3 showed manifest hypertension after the disappearance of acute symptoms. Lian and Haguenau place these cases in three categories: a certain number recover completely; in some a "simple" albuminuria persists without evidence of renal changes or hyperpiesis; in other patients chronic nephritis, with or without hypertension, supervenes, but all authorities agree that this is rare. The authors conclude that (1) acute or chronic nephritis is, in certain cases, the exciting cause of transitory or permanent arterial hypertension; (2) there are both transitory and permanent cases of hypertension not due to nephritis; (3) there are cases in which arterial hypertension, either transient or permanent, coincides with the bacterial infection or with the intoxication which produces an acute or chronic nephritis. Hyperpiesis may result from a disturbance of the endocrino-sympathetic system, from certain toxins or toxic products in the absence of a renal lesion, from certain nervous disturbances, either direct or reflex, or, lastly, from the interaction of two or more of these processes.

265. Recovery in Pneumococcal Meningitis.

W. RIEDER (*Klin. Woch.*, September 2nd, 1924, p. 1628) refers to the gravity of the prognosis in pneumococcal meningitis, but cites cases of recovery in which the diagnosis had been confirmed bacteriologically. Eugen Fraenkel states that 2 per cent. of patients recover, while Lubarsch estimates the ratio at 1 per cent. The results of specific serum therapy have been generally disappointing; Schlesinger reports, however, three recoveries following administration of pneumococcal serum. Morgenroth's "optochin," successfully used in very dilute (1 in 500,000) solution in pneumococcal keratitis, has been recommended by several authorities in pneumococcal meningitis. Wolff and Lehmann claim to have cured an infant, aged 8 months, by repeated intrathecal and intraventricular injections of optochin. Loewe, Meyer, and I. Valentin have recorded recoveries after its use, and Landsberger and Leschke recommend relatively large intrathecal doses of optochin. Rieder records the following case, which suggests that these writers have underestimated the therapeutic value of the simultaneous lumbar punctures. A woman, aged 24, who had suffered from chronic double otitis media with perforation of both membrana tympani, but who was otherwise healthy, sustained a contused wound on the left side of the forehead; subsequently she complained of headache, tinnitus, and irritability. Four days later the eyelids were swollen and there were subconjunctival ecchymoses; she was deeply flushed with labial herpes, and there were physical signs of early consolidation in the left lung. The Kernig sign was positive, the Babinski negative. There was definite hyperaesthesia of the skin but no exacerbation of the chronic otitis media. The blood culture was sterile; a blood count showed 10,000 leucocytes per cubic millimetre, the differential count was normal. The Wassermann reaction of both the blood and the cerebro-spinal fluid was strongly positive. Pneumococci were recovered from the spinal fluid. Three further lumbar punctures were performed on alternate days; 20–30 c.cm. of fluid was removed on each occasion, and 20 c.cm. of physiological NaCl solution was twice injected into the spinal canal. The temperature fell to normal on the twelfth day; after the fall the headache and all other symptoms of meningitis disappeared, and the patient made a complete recovery. Rieder observes that if optochin had been used in this case the *post hoc ergo propter hoc* argument might have been used. The case shows that untreated pneumococcal meningitis is not necessarily fatal.

266. Small Doses of Iodine in Graves's Disease.

J. WAHLBERG (*Finska Läkaresällskapets Handlingar*, May–June, 1924, p. 385) confirms the observations of Neisser, published in 1920, which suggested that iodine may be beneficial as well as injurious in Graves's disease. The author finds the problem is largely one of dosage, and he gives even smaller doses than those recommended by Neisser. Wahlberg gives iodine in the form of potassium iodide, a 1 in 20 aqueous solution containing 0.0033 gram of potassium iodide per drop; he does not give more than 15 drops in the day. This treatment was given in eight cases of hyperthyroidism and in one case of vasomotor neurosis with a goitre. The basal metabolism was investigated with Krogh's apparatus, and there was in every case at first a reduction. In most cases the pulse became slower and the patients felt better. But the ultimate results were not so satisfactory as those of Neisser; indeed, there was only one case in which marked improvement was maintained. In two cases the disease became worse, and this was probably on account of the treatment, a cumulative action of the drug having stultified its early beneficial effects. But these early effects were so promising that the author considers this line of treatment deserving of further research.

267. Measles without Eruption.

E. KRASEMANN (*Monatsschr. f. Kinderheilk.*, 1924, xxvii, p. 510) remarks that cases of measles with an ill marked or entirely absent eruption have been seen more frequently since the introduction of the prophylactic use of convalescent serum. In the first half of 1923 there was a severe outbreak of measles at Rostock, and Krasemann noted that the eruption was absent in about 3 per cent. of all the cases, the diagnosis of measles being based on exposure to infection, appearance of Koplik's spots, and the subsequent spread of infection. Three examples of this kind occurred in three brothers, aged 2, 6, and 7 years respectively. The symptoms in each case were nasal discharge, conjunctivitis, cough, irregular temperature, slight bronchitis, and in two cases typical Koplik's spots.

A girl, aged 3 years, who visited the brothers, developed measles with a well marked eruption a fortnight later. The mother of the three children stated that she had never had measles, but that her mother had had two severe attacks. The mother's immunity, therefore, was still fully developed, while that of the children was incomplete.

268. Tryparsamide in Neurosyphilis.

W. F. LORENZ, A. S. LOEVENHART, T. F. REITZ, and C. P. ECK (*Amer. Journ. Med. Sci.*, August, 1924, p. 157) report the results of treatment of neurosyphilis with tryparsamide and mercury salicylate in 185 cases over a period of two years. The tryparsamide was administered intravenously once a week for eight weeks in an average dosage of 3 grains, 1/2 to 1 gram of mercury salicylate being given intramuscularly between each injection. Both clinically (gain in weight and improved general health and vigour) and serologically the treatment was found to be effective in early paresis and meningovascular syphilis, and to a lesser extent in tabo-paresis, tabes, and advanced paresis, the clinical improvement generally preceding the serological. Definite paretic psychoses disappeared, and the mental restoration has persisted over a two-year period. Of the total number treated 7 per cent. had amblyopia, while in the tabes and tabo-paresis cases 23 per cent. showed similar visual disturbance. In 13 cases occurring during the tryparsamide treatment the amblyopia cleared up after it was stopped, and 12 of these subsequently resumed treatment without further eye trouble. The majority of the cases under consideration had received other forms of antiluetic treatment, with but poor results, before the tryparsamide and mercury treatment was commenced, and the authors consider that they have established the value of tryparsamide treatment.

Surgery.

269. Traumatic Gastric Ulcer.

R. L. BAENA (*Arch. de med., cir. y esp.*, July 5th, 1924, p. 5) states that the first example of traumatic gastric ulcer was reported by Potain in 1856, since when numerous cases have been recorded. C. Petit in 1914 collected 73 cases, which he divided into three groups: (1) 22 cases of rapid course, of which 18 recovered and 4 died; (2) 42 protracted cases, of which 9 recovered, 4 died, and the rest showed some improvement or remained stationary; (3) 9 cases in which the issue was unknown. The condition is most frequent in men, who are more exposed to abdominal trauma than are women, and in adults more than in children. In 67 of Petit's cases the ulcer was the effect of direct violence, in only 2 was it due to indirect violence, and in 4 it resulted from a strain. The stomach usually escapes abdominal injuries owing to its anatomical position, but during digestion it comes in contact with the abdominal wall, and then becomes exposed to injury. Previous pathological conditions of the stomach, such as dilatation, render it more susceptible to trauma. Axenfeld and Petit state that traumatic gastric ulcer almost always occurs on the posterior surface of the stomach or the lesser curvature, owing to the relative fixity of this region, its relation to the vertebral column, and the form and constitution of the stomach. The local symptoms are pain, vomiting, and haematemesis. The pain, which is of variable intensity, is a constant feature, and is diffused over the base of the thorax, the epigastrium, and hepatic region. It is spontaneous, but is aggravated by palpation and the taking of food. Haematemesis occurs at three distinct periods: first, directly after the trauma, indicating a lesion of a gastric vessel; secondly, some days to a week later, coinciding with the separation of the slough; and thirdly, some months later, when it is the sign of a definite gastric ulcer. In addition to the symptoms which are common to traumatic ulcer and the ordinary gastric ulcer, are more or less marked gastric dilatation, palpitation, and syncopal attacks. The prognosis is more favourable than that of spontaneous gastric ulcer. Recovery is the rule, and death from haematemesis or perforative peritonitis is the exception.

270. Complete Recovery from Fractured Spine.

A. THORNDIKE (*Acta Chir. Scand.*, August 13th, 1924, p. 339) has investigated the immediate and late results in 47 consecutive unselected cases of fracture of the spine treated at his hospital between 1914 and 1924. In every case the diagnosis was confirmed by the *x* rays, an operation, or a necropsy. The spinous processes only were involved in 6 cases. In the remaining 41 cases the bodies of the vertebrae were involved, and in 7 of these cases there were signs of injury to the spinal cord. These 7 patients fared badly—5 died, 1 was still in hospital, and 1 could not be traced. But in most of the other cases the author was amazed to find how complete had been the recovery. He succeeded in tracing 25, 23 of whom he was able to examine by the *x* rays. All the 25 had been able to resume work, most of them full-time work. Five of the patients had, indeed, been forced to seek lighter occupations as a result of their injury, but in all these cases the work was whole-time. The average duration of invalidism in these 25 cases was 330 days. In most of the 47 cases the injury was indirect, and only in 10 cases had there been direct trauma over the fractured vertebrae. A classification of the cases, according as they were industrial or not, showed that 57.7 per cent. belonged to the former class. Building, dock, and common labour accounted for 81 per cent. of these industrial accidents. One of the chief deductions of the author is that, provided the spinal cord is not injured, the modern treatment of fractures of the spine may take considerable time, but ultimately gives excellent results.

271. Effects of the Injection of Sodium Citrate on Bleeding.

S. G. HIGGINS and D. FISHER (*Annals of Surgery*, August, 1924, p. 268) find that the intramuscular injection of sodium citrate causes a prompt reduction of the coagulation time of the blood. In 1915 this salt was first used clinically to prevent coagulation of blood in transfusion operations, and, being recognized as an anti-coagulant, the question logically arose: Would the introduction of the citrate suspend coagulation of the recipient's blood? This did not occur. The author's report is based on a series of over fifty cases. A 30 per cent. sodium citrate solution was used, the injection of 15 c.cm. into each buttock being preceded by an injection of novocain. This method is apparently free from danger, no untoward results having been noted. The administration resulted in a prompt and pronounced shortening of coagulation and of the bleeding time, which was of two or three hours' duration, with a gradual return to the normal within twenty-four to forty-eight hours. This did not occur when there was marked diminution or absence of blood platelets, as in purpura or haemophilia. The method has been used in tonsil operations with success. In a case of gall stones accompanied by intense jaundice the coagulation time was reduced from nine to two minutes, one hour after the citrate injection, and no difficulty with bleeding was encountered during or after the operation. Both pulmonary and intra-abdominal haemorrhage were successfully controlled by this method. The citrate action occurs not only in persons who have an average coagulation time, but also in those with an abnormal prolongation as in jaundice. Sodium citrate appears to act directly upon the blood platelets, destroying them and liberating a substance which activates the process of coagulation.

272. Post-operative Haematemesis and Digestion of Oesophagus.

A. DE GROODT (*Nederl. Tijdschr. v. Geneesk.*, June 21st, 1924, p. 2838) reviews the literature, especially the papers by J. H. Teacher (*Brit. Journ. Surgery*, 1919, and *Journ. Path. and Bact.*, 1921), and gives the following description of the lesions found in this condition. (1) In two cases the lesions in the oesophageal mucous membrane were only superficial. (2) In a series of seven cases there was a digestion of the oesophagus for a considerable extent. The upper part was apparently normal, but in the lower part the mucous membrane was hyperaemic and there were long blackish-brown streaks which appeared to be the result of haemorrhage into the mucosa. In some cases there was much dark fluid in the oesophagus and the tissues were softened. (3) In another series of cases the oesophagus was perforated in its lower portion and superficial lesions were found in its upper part. De Groodt emphasizes the fact that digestion of the oesophagus, which has hitherto been regarded as a *post-mortem* phenomenon, may occur during life in all diseases in which the vital forces are much reduced. Haematemesis is a manifestation of the condition and is of great practical significance. The diagnosis is possible during life and the condition is susceptible to treatment by alkaline fluids. Hyperaemia of the oesophageal wall as the result of obstruction to the flow of blood from the portal vein into the liver probably gives rise to the condition. The gastric juice which is retained in the oesophagus owing to spasmodic contraction of the cardiac orifice appears to be the digestive agent. Possibly hypersecretion of the glands in the oesophageal mucosa also plays a part.

273. Sequels of Gastric and Duodenal Ulceration.

H. KROHN (*Norsk Mag. f. Laegevidenskaben*, July, 1924, p. 540) has investigated the subsequent fate of 266 patients treated for gastric or duodenal ulcer in a hospital in Christiania in the ten-year period 1911 to 1920. In all but 3 of these cases there was a history of haematemesis or melaena. Of the 172 patients about whom information could be obtained, 34 were

dead, 10 having died in hospital of the haemorrhage for which they were admitted. One patient had died of haematemesis and one of perforation after discharge. There were only 5 deaths from cancer of the stomach, and since the symptoms of gastric disease had lasted two years or less before death in 2 of these cases, they may well have been malignant from the outset. These figures suggest that cancer as a sequel to gastric or duodenal ulceration is not so common as was thought, and that after the patient has left hospital his chances of dying from a haemorrhage or a perforation are slight. Only 32 of the patients in this series received operative treatment.

Laryngology and Otology.

274. Tracheal Diseases.

W. SYME (*Journ. of Laryngol. and Otol.*, June, 1924, p. 305) calls attention to the fact that the trachea possesses a high degree of immunity in comparison with other parts of the respiratory passages. Tuberculous disease of the trachea is not very uncommon, but as a primary focus is extremely rare, if indeed it exists at all. The author describes a case in which the disease was well advanced in the trachea and very early in the lungs, and suggests that this may have been a true case of primary tuberculosis. The trachea also resembles the small intestine in its relative immunity to malignant disease, unlike the neighbouring larynx and oesophagus. The author has had under his care an undoubted case of primary malignant disease of the trachea—a columnar-celled carcinoma, which was removed by the direct method, but recurred and involved the mediastinum. A second case is described in which the thyroid was also involved and may have been the primary site. Squamous-celled carcinoma may occur, but the columnar-celled type is more common, since there are only occasional islets of squamous epithelium in the lining of the trachea. Papillomata occur in the trachea, and may act as a ball-valve to the bronchial openings or may pass down into the bronchi themselves. Stenosis of the trachea is most commonly due to pressure from an enlarged thyroid. A cyst of the thyroid in the author's practice had to be opened and evacuated in an emergency on account of acute suffocation during examination of the upper air passages by the direct method. Epithelioma of the oesophagus may exert pressure on the trachea without involving the wall. The author has not seen a case of tracheocele, but records a case in which the oesophagus bulged forwards into the trachea, causing considerable respiratory distress. There was no pocket formation in the oesophagus, but a flabby condition of the mucosa. The history dated from the passage of a stomach tube which caused considerable pain, and it may be that the oesophageal wall was injured, becoming more adherent to the tracheal wall.

275. Malignant New Growths of the Pharynx and Larynx.

SARGNON (*Rev. de laryngol., d'otol. et de rhinol.*, July 15th, 1924, p. 421) records a large number of cases of malignant new growth of the larynx and the neighbourhood. He is only able to cite a single case of growth in the pharynx which remained free from signs of recurrence for more than three years. This was a post-cricoid tumour; it was treated by a laryngo-fissure and embedding of radium in its interior for twenty-four hours. Laryngeal carcinomata which either began or have extended outside the larynx denote a very grave prognosis; not one of the patients in the author's series has survived. Some patients have been recently treated by particularly deep radiotherapy with less than the usual filtration, and the author reports that improvement has been much more marked than usual; he reserves his prognosis, however. In cases of intrinsic laryngeal carcinoma the outlook is very much better. In cases in which the growth has spread, particularly on to the posterior wall, a laryngo-fissure is performed, and radium and x rays are applied directly. The author does not perform complete laryngectomy in these cases. Growths which are localized to one vocal cord are treated by laryngo-fissure, removal of the affected cord with as wide a margin as possible, and then direct application of radium followed by x rays, at first through the open wound and later through the skin. The radium is used in small doses with very long exposures, but with a considerable amount of filtration through a gold or platinum plate, one or more sheets of aluminium, and a substantial layer of gauze. The author does not attempt to extirpate completely a growth in the lower pharynx, or an extrinsic pharyngo-laryngeal growth, but relies on the application of well filtered radium directly into the growth and through the skin, followed by a course of deep radiotherapy.

276. Paroxysmal Cough of Nasal Origin.

M. BOUTAREL (*Paris méd.*, September 6th, 1924, p. 200) states that not infrequently a patient—usually a woman—complains of chronic cough which nothing will relieve. The cough is dry, violent, and very troublesome, and may occur after slight change of temperature, or of position (for example, lying on the back), or in a tobacco-laden atmosphere, or without appreciable cause. It may be preceded by pharyngeal or laryngeal tickling sensations or by itching of the nasal mucosa, or it may occur suddenly and without warning. The paroxysms recur many times daily, sometimes every hour, and persist for several minutes. In other cases the cough is not paroxysmal, and, though less painful, is no less distressing. No evidence of lung disease is obtained. Examination of the throat reveals a more or less intense pharyngitis, with varicosity of the fauces and possibly a few granulations; the palatal reflexes are normal or exaggerated, and the vocal cords may be slightly pink. Intranasal examination shows slight hypertrophy of the turbinals, the mucosa is red and softened, and the application of cocaine-adrenaline solution may result in the removal of congestion. Cauterization of the pharyngeal granulations and of the turbinals gives but little and transient relief; permanent cure will be obtained only by resection of the inferior turbinals. Boutarel gives details of two cases; both patients were middle-aged and otherwise very healthy women, and both were entirely relieved by resection of the inferior turbinals.

Obstetrics and Gynaecology.

277. Acidosis in Pregnancy.

H. ROULLAND and HÉLOUIN (*La Gynécol.*, June, 1924, p. 342) report in full detail a case of acidosis in pregnancy. A woman in the fourth month of her fourth pregnancy began to vomit; the hyperemesis increased and was accompanied by fever, delirium, and diplopia. The urine contained a trace of albumin, 8 grams of sugar per litre, some pus, but no acetone. A week later acetone and ketone bodies were found, but at this time there was no sugar. The blood sugar was, however, 1.85 grams per litre, indicating a state of hyperglycaemia. The pregnancy was now ended. The patient recovered, the urine returned to normal, and the blood sugar was 1.2 grams per litre. The above clinical picture shows an acidosis preceded by glycosuria. The authors suggest that this would have been a case for insulin even if the acidosis were not due to diabetes. They put forward the idea that all forms of acidosis have the same origin whether due to diabetes or not. Acidosis appears when, in consequence of glycolytic insufficiency, the blood sugar can no longer be used by the body in quantities sufficient for its needs. Now, insulin acts first on the acidosis before it influences the glycosuria, and to the authors this suggests the following conclusions. The result of the functional insufficiency of any one ferment-forming organ will be the disorganization of all reducing and oxidizing ferments, combined with insufficiency of the latter. Thus the polypeptides will be reduced to diacetic acid, and the body will react by increasing the blood sugar to supply the needs of the former by the most economical method. Since glucose cannot rise beyond a certain concentration in the blood without appearing in the urine, this glycaemia will be followed by glycosuria. The initial cause of the whole pathological process is diastatic insufficiency, of the type that is influenced by insulin. Pregnancy brings with it insufficient production of certain ferments; the body is unable completely to counteract this by raising the blood sugar, and so acidosis results. Insulin would restore to the body the missing ferments which it needs, and would thus abolish acidosis. Further investigation is necessary to determine how long the pregnancy, which is the cause of the insufficiency, would continue to exert its malign effect on hepatic and diastatic function.

278. Menstruation Changes in the Skin.

A. HIRSCHBERG (*Zentralbl. f. Gynäk.*, September 6th, 1924, p. 1966) points out that menstruation is known to affect various organs far removed from the genitalia—such as the mammae, kidneys, mucous membranes of nose, etc.—and these may react either by pathological changes in their structure or by discharge of blood at the menstrual periods. He asserts that the skin often reacts also at such times, with the appearance of acne, erythema, urticaria, herpes, etc., though definite subcutaneous haemorrhages are very rare. He quotes, however, the case of a woman, 35 years of age, with an otherwise normal menstrual history and with no obvious pathological condition of her genitalia, in whom there appeared, eight to ten days before each period, an extravasation of blood as big as the palm of the hand on the upper and outer

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parts of both thighs, apparently following the course of the circumflex iliac vessels. The extravasation was blue-red in colour, was neither tender nor sensitive to pressure, and when the true period began gradually disappeared. The diagnosis from a traumatic extravasation in this case was easy, as there was no history of trauma, no tenderness, and the lesion appeared with absolute regularity eight to ten days before the beginning of each period. Hirschberg considers the case one of complementary rather than vicarious menstruation, and ascribes the condition to increased permeability of the vessel walls, due to some disturbance in the endocrine equilibrium, though he is unable to explain why one vessel should be alone affected.

279. Diagnosis of Sterility.

M. HUHNER (*Amer. Journ. Obstet. and Gynecol.*, July, 1924, p. 63) describes the tests which he employs in cases of sterility. Microscopic examination of an unstained condom specimen of normal semen shows very many spermatozoa moving with extreme rapidity; if on early inspection the spermatozoa are few, dead, absent, or moving very feebly, and numerous Böttcher's crystals are present, the semen is certainly abnormal. In cases of azoöspermia thus detected surgical treatment of obstruction in the epididymis is only justifiable, according to Huhner, after the fluid from the testicle has been examined also; if numerous active spermatozoa are present in this the diagnosis of obstruction is correct and operation is indicated. Absence of spermatozoa in the aspirated fluid may be due to an attack of mumps or to severe gonorrhoeal orchitis; in such cases operation would be useless. A further test described by the author is that of microscopical examination of the fluid removed by pipette from the cervix uteri as soon as possible after coitus; the presence of numerous live spermatozoa shows that the male semen is not at fault, that the position of the cervix is physiologically suited for impregnation, and that the cause of sterility may reside higher in the female genital tract than the cervix. A positive result of this test serves to exclude from responsibility for sterility (1) anatomical causes in the male, (2) premature ejaculation, (3) a possibly inimical action of the vaginal or cervical secretion on spermatozoa. If the condom specimen contains live spermatozoa and the cervical specimen dead ones the female genital secretions may be unduly acid; and if then coitus be preceded by an alkaline douche, the cervical specimen may be found to contain live, active spermatozoa, thus furnishing a clue to treatment. The finding of living spermatozoa in the fundus uteri two or three days after coitus, when spermatozoa in the cervix are dead or absent, signifies that sterility is due to (1) a small infantile uterus, (2) tubal obstruction, (3) ovarian abnormalities, or (4) disharmony between the germinal cells of the husband and wife. The performance of the last-mentioned test will indicate when operations for dilatation, curetting, or correction of uterine malposition are bound to be fruitless.

280. Menorrhagia and Radium Therapy.

R. CROUSSE (*Gynécol. et Obstét.*, 1924, ix, 6, p. 539) regards radium therapy as the last treatment to be tried, before resorting to hysterectomy, in severe and intractable cases of uterine bleeding in young women. It has the advantage that some chance of child-bearing is preserved, and the suggestion of recent experimental work, such as that of Lacassagne, that radiation in small doses may lead to deleterious effects on the ova and therefore the offspring, lacks confirmation at present. He reported to the Belgian Gynaecological and Obstetric Society three cases resistant to other modes of treatment, in which small doses of radium, filtered through platinum and lead, were given by the vagina. In the first patient, a nullipara aged 22, the second, third, and fourth next expected periods were missing and the subsequent ones were normal. The second patient, a nullipara aged 28, had normal menses two months after treatment, and ten months later became pregnant and went to term. In the third patient, a single woman aged 27, surgical treatment was contraindicated by reason of a haemophilic tendency: two radium applications were followed by amenorrhoea, but by rectal and other apparently vicarious haemorrhages.

Pathology.

281. Action of Insulin on Blood Coagulation.

J. LA BARRÈ (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, July 10th, 1924, p. 531) pleads for the compulsory use of a method of insulin preparation, such as that employed by Banting, which will produce it in a purified form. It is recommended that the insulin be precipitated from an aqueous solution by ammonia sulphate (half-saturated), allowed to stand for twenty-four hours, then centrifuged, and the supernatant fluid drawn off. The precipitate (which contains the insulin) should be dissolved in 70 per cent. alcohol, concentrated to one-tenth of its volume, and added to 94 per cent. alcohol, by which the insulin is again precipitated. After further centrifugalizing the alcohol is removed, leaving a fine white powder of pure insulin. In a series of experiments the author has demonstrated that if "impure" insulin be employed there is delay in clotting both *in vitro* and *in vivo*, and when only extremely small amounts were used. The main action appeared to be an inhibition of the interaction between the fluid and cellular elements of the blood which normally results in the production of thrombin. With "pure" insulin, on the other hand, no such delay in clotting was observed. The author is of opinion that the retarding action of impure insulin is to be attributed to the presence of derivatives of choline or analogous substances. In the usual dose of insulin (which he gives as ten units) there is present about 80 mg. of choline, and it has been found that 2.5 mg. of the latter will arrest the process of clotting, while even 0.5 mg. will retard it. Moreover, it has been noted that impure insulin contains products possessing a hyperglycaemic action and opposing the hypoglycaemic effects of insulin prepared according to the method given above. As it has been found that choline injected intravenously into the dog causes a short hyperglycaemia, and as pancreatic substance contains 0.015 per cent. and blood serum only 0.0002 to 0.002 per cent. of choline, the author considers that it is to the latter substance that the hyperglycaemic action of impure insulin is to be attributed—an additional argument in favour of the employment of the purified product. In conclusion he emphasizes the importance of using purified insulin in the injections now so frequently given prior to operation on diabetics, in support of which he cites a case recorded by Vernieuwe where the employment of an impure product resulted in profuse haemorrhage on account of the antithrombitic action produced.

282. Stability of Pneumococcus Types in Sterile Abscesses.

PREVIOUS work has shown that *B. typhosus* and *B. pestis caviae* become relatively inagglutinable when grown in sterile fixation abscesses in mice. E. MEGRAIL and E. E. ECKER (*Journ. Inf. Dis.*, July, 1924, p. 1) have now made experiments to test whether the same results occur in the case of the pneumococcus. A 2 per cent. suspension of gum tragacanth was injected subcutaneously into mice and rats. After a time varying from six to twenty-four hours a salt suspension of a blood agar culture of a type pneumococcus was injected into the resulting abscess; the organisms were withdrawn when the animal showed signs of serious illness, and were then passed through another animal, and so on till several passages had been accomplished. The biological and agglutination properties of the organism were studied before and after the transfers to ascertain whether any changes had occurred. Several experiments, varying in details, were carried out, but in no case was any change found to take place. Inulin fermentation and bile solubility remained unaltered in the passed strains; in only one case was the agglutination titre lowered through passage; in all the remaining cases it was the same as before. Even when the animals were kept alive longer by the injection intraperitoneally of immune serum, and the organisms remained in contact with the abscess contents for a greater time than they otherwise would have done, the agglutination reactions were unchanged. From these experiments the authors conclude that the pneumococcus has a type stability when placed under conditions in which typhoid bacilli and other organisms show variability. It may be noted that they were working with whole cultures, not with single colony strains.

283. Fungi in Diarrhoeal Conditions.

M. S. FLEISHER and M. WACHOWIAK (*Amer. Journ. Med. Sci.*, September, 1924, p. 371) studied culturally the relation of fungi to diarrhoeal conditions in a series of 32 cases, in 20 of which the fungi were isolated from the stools and, in some, from the blood. In rabbits the organisms caused diarrhoea and even death, and were found in the blood and internal organs of some of the animals. Although monilia, or similar organisms, may be present in normal stools they are relatively infrequent, and yet in this series of 32 cases, in which diarrhoea was a prominent symptom, such organisms were present in the stools in 62.5 per cent. In some of these cases identical organisms were demonstrated in the blood, thus pointing to a causal relation between the organisms and the symptoms. This view is further supported by their presence in the blood stream, as also by the improvement following vaccine therapy in some of the cases. The authors add that organisms of this type should be suspected in chronic diarrhoeas otherwise unexplained.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

284. Influenza and Meningococcal Infection.

C. DOPTER (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, August 25th, 1924, p. 700) records a small epidemic of cerebro-spinal fever which occurred in the garrison at Rochefort in December, 1923. Five cases occurred in the course of four days, then there were no more for twenty-five days, when there was another case, followed by the seventh a fortnight later, and by the eighth and last after another six weeks. The outbreak thus consisted in the sudden appearance of an epidemic focus followed by sporadic cases, which occurred during the course of the next three months. Meningococcus infection had been endemic in the garrison for some years. The outbreak of cerebro-spinal fever occurred during an epidemic of influenza, and as soon as the latter had subsided the meningococcus infection resumed its usual insidious course. Influenza may be regarded as one of the favouring causes of meningococcal infection, and may give rise to outbreaks which are apparently primary, but are really only the expression of an exacerbation of meningococcal rhino-pharyngitis. Dopter refers to the investigations made in 1919 by W. Fletcher, who found the meningococcus as well as *B. influenzae* in the lungs and heart blood of American soldiers who had died of influenzal bronchopneumonia.

285. Intestinal Toxaemia.

R. S. BOLES (*Therap. Gaz.*, August, 1924, p. 548) believes the poisoning of intestinal toxaemia to be due to absorption of toxins from the lower ileum and caecum in consequence of regurgitation from the colon through an incompetent ileo-colic valve. The substances so absorbed, he thinks, are indole-containing derivatives of amino-acids due to the action of putrefactive bacteria flourishing in consequence of excessive protein ingested, or producing toxic substances by attacking the amino-acids when there is insufficiency of carbohydrate in the intestine. Some of the toxins identified are: tyramin, which raises the blood pressure; histamin and cadaverin, which lower it; and indole, which produces headache and vomiting. It is possible that these toxins attack one kind of tissue in one person, another kind in another person; thus one patient may have gastro-intestinal symptoms, another articular, a third neural, a fourth mental. The liver, too, may "detoxicate" more thoroughly in some persons than in others. Among the general symptoms are: physical and mental fatigue, dizziness, headache, cold extremities, anaemia; the gastro-intestinal symptoms are anorexia or capricious appetite, hyperacidity or achylia, gastric atony, pylorospasm, spastic colitis, appendicitis, and cholecystitis. The neural and mental symptoms may include neuritis, neurasthenia, melancholia, insomnia, indecision, migraine, epilepsy, and dementia praecox. The cutaneous manifestations include urticaria, acne, eczema, erythema nodosum, and erythema multiforme. Boles mentions three cases of brittle nails cured by stopping the toxaemia; he traces certain cases of blurred vision, scotomata, iritis, and choroiditis to this intestinal origin. Diagnosis involves a careful analysis of symptoms and a thorough physical examination, in which *x*-ray examination should always be employed; the faeces and urine being also examined. Treatment by continuous irrigation of the colon is highly recommended, and milk cultures of *B. acidophilus* appear to be beneficial; agar and liquid paraffin have been found useful also.

286. Luminal and Pyramidon Rashes in the same Patient.

W. BOTHE (*Klin. Woch.*, September 9th, 1924, p. 1678) describes the following case. A girl, aged 11, who had suffered from epilepsy since the age of 5, had been treated formerly with bromides, but for three weeks had received a daily dose of luminal (0.1 gram). A morbilliform rash then appeared, and, in spite of treatment, she developed a universal "drug erythema" resembling a salvarsan dermatitis, with considerable fever (105° F.), marked generalized oedema, and painful fissures at the flexures of the joints. This was followed by desquamation of the abdomen, back, hands, and feet. No visceral lesion was detected, but there was marked leucocytosis with eosinophilia (25 per cent.). After nine weeks the temperature became normal, but there was total loss of hair and of nails, with pyodermia. After the disappearance of the dermatitis sensitization tests were carried out with a 50 per cent. luminal-sodium ointment and minute oral doses of the same substance (=0.01 and 0.05 gram); all tests were positive: the former oral dose produced diffuse erythema, while, after the latter, the rash became intense and universal. None of the controls reacted. On recurrence of epilepsy, three and a half months later, the patient was given 0.2 gram of pyramidon daily (by mouth). Two days later a scarlatiniform erythema appeared, with bullae on the hands, which healed after desquamation. The sensitization tests were positive, as with luminal.

287. Typhoid Bacilluria.

A. HERZ and G. HERRNHEISER (*Wien. Arch. f. inn. Med.*, August 15th, 1924, p. 413) record in detail their observations on typhoid bacilluria, based on 374 typhoid affections, with 219 cases of specific bacilluria; they estimate that this bacilluria occurs in about 40 per cent. of the cases. The most characteristic indication was pus in the urine. They point out that bacilluria is always associated with disease in the urinary organs, most frequently with localized kidney disease, and with a localized interstitial infiltration (lymphoma and abscess). Other associated diseases are affections of the pelvis of the kidney, bladder, prostate, and vesiculae seminales. The chief causes of the permanent excretion of typhoid bacilli are stated to be chronic inflammatory processes in the pelvis of the kidneys and the bladder; and also typhoid affections of the urinary organs following a non-typhoid process, such as stone in the kidney and bladder, hydronephrosis, pyonephrosis, abscess in the prostate and vesiculae seminales. The excretion of typhoid bacilli in the urine plays an important part in the transmission of the disease, and the danger of infection in this way is greater than that of infection from the faeces. As regards the prophylaxis and treatment of bacilluria, the authors recommend, in every case of typhoid or paratyphoid fever, hexamine in doses of twenty grains daily, directly the diagnosis is made, and continued for several weeks during convalescence. If prophylactic treatment has not been carried out, a preparation of hexamine should be given for at least four weeks when bacilluria is diagnosed. If this does not free the urine from bacilli accurate examination of the urinary tract by means of the cystoscope and ureter catheter, and functional tests of the kidneys, should be carried out, the seat of the disease localized, and eventually, in certain cases, operation may have to be considered.

288. The Tonsils in Rheumatic Arthritis.

ÖSTEN HOLSTI (*Finska Läkaresällskapets Handlingar*, May–June, 1924, p. 365) has made microscopic examinations of a large series of tonsils taken from three classes of persons: (1) healthy persons, (2) patients suffering from rheumatic arthritis, and (3) patients suffering from a variety of other diseases, such as heart disease. The 13 tonsils taken from healthy persons showed signs of slight chronic inflammatory changes but no severe destructive processes. About two-thirds of the 83 tonsils taken from the subjects of rheumatic arthritis (chronic rheumatic arthritis, acute relapsing arthritis, and acute arthritis) showed much more extensive and severe disease, necroses and far-reaching changes in the vessels being demonstrable. The 107 tonsils taken from patients suffering from diseases other than arthritis showed slight chronic inflammatory changes similar to those in the first group of healthy persons. After a detailed study of the clinical relationship of attacks of sore throat to the arthritic disease in his patients, the author comes to the conclusion that there is often a definite connexion between disease of the tonsils and of the joints.

289. Early Jaundice in Syphilis.

C. W. BOTTEMA (*Nederl. Tijdschr. v. Geneesk.*, August 2nd, 1924, p. 653) states that jaundice is a rare occurrence in syphilis, and in recent infections usually develops after the appearance of the secondary rash. In such cases it may be (1) haematogenous or haemolytic; (2) hepatogenous, being either intrahepatogenous or extrahepatogenous through occlusion of the bile ducts by swelling of the mucous membrane or enlarged lymphatic glands; (3) caused by a combination of haematogenous and hepatogenous factors, as probably occurs in the majority of cases. Bottema records the case of a man, aged 18, who developed jaundice about the same time as the inguinal adenitis accompanying the chancre, or about four weeks before the appearance of a secondary rash. Rapid disappearance of the jaundice took place after antisyphilitic treatment.

Surgery.

290. Conservative Treatment of Pott's Disease.

S. LESKINEN (*Acta Chir. Scand.*, August 13th, 1924, p. 193) has investigated the after-histories of patients given conservative treatment for Pott's disease in a hospital in Helsingfors in the period 1895–1920. Of the 241 patients, as many as 21 died in hospital. Only 137 patients could be traced, and it was found that 43 had died after leaving hospital; the mortality, therefore, was as high as 40.5 per cent. The survivors who were traced were classified according as they were still ill, fairly well, or cured. It was found that, apart from the mortality of 40.5 per cent., the patients who were still ill represented 12 per cent., the patients who were fairly well 17.1 per cent., and the patients who were cured 30.4 per cent. of all the patients whose fate could be ascertained. Tuberculosis was the cause of death in 57 of the 64 cases terminating fatally. The prognosis proved to be best for caries of the cervical vertebrae, the proportion of cases of complete recovery being as high as 68.5 per cent. The prognosis was worst for the cases of disease of the thoracic vertebrae, only 21.1 per cent. of the patients in this class recovering completely. A classification of the patients, according as their disease was or was not complicated by abscesses, fistulae, etc., showed how enormously such complications reduced the expectation of life; only 8.4 per cent. of the patients with fistulae recovered completely.

291. Treatment of Tuberculous Abscesses and Fistulae.

G. J. HUËT (*Nederl. Tijdschr. v. Geneesk.*, June 21st, 1924, p. 2826) alludes to the work of Lansberg, Kijzer, and Sir Leonard Rogers (see JOURNAL, February 8th, 1919, p. 147) on the treatment of tuberculosis and leprosy by injections of cod-liver oil or sodium morrhuate, and reports his experience of injections of tuberculous abscesses and fistulae with a mixture of cod-liver oil and iodoform in place of the ordinary iodoform emulsion. He obtained such remarkable and rapid improvement that as he had not sufficient cases of his own he invited van Dorp-Beucker Andreae to test the method in the Marine Hospital at Katwijk. D. VAN DORP-BEUCKER ANDREAE and F. S. L. VAN BRERO (Ibid., July 26th, 1924, p. 511) have treated 31 cases of tuberculous abscesses or fistulae by injection of neutralized and sterilized cod-liver oil combined with bismuth carbonate, as recommended by Kijzer. Like this observer, the authors found that this preparation penetrates farther than Beck's paste owing to its greater fluidity. The results of treatment were as follows: In 5 cases the disease progressed in spite of treatment, and in 3 it remained stationary. All these 8 cases were in children suffering from very severe forms of tuberculosis of the knee, hip, or spine, of several years' duration. Some of the cases could not be taken into consideration, as they had to leave the hospital prematurely for other than medical reasons. In the remaining 23 cases considerable improvement or actual recovery took place during treatment, in some cases, indeed, immediately after it had begun. Although the number of cases treated was not sufficient to be conclusive, the results obtained justified further trial of the method.

292. Steinach's Operation.

LEVY-LENZ (*Deut. med. Woch.*, August 15th, 1924, p. 1121) has ligatured the vas according to Steinach's technique in about 50 cases, and finds that the operation can be easily performed under local anaesthesia in five to ten minutes, under ambulatory conditions. The vas should be secured as close to the testicle as possible, ligatured in two places with silk, and then divided. The 2 cm. long incision in the scrotum is sutured at once, a small dressing is applied, and a suspensory bandage worn for a fortnight. The author says there may be an immediate transitory effect, but permanent results are not to be expected till four to six months later. He is not very enthusiastic about this operation, and in no case of what he calls normal old age has he seen any benefits follow it; only when old age has come on early, and presents morbid rather than normal characteristics, with slight mental depression, has the operation seemed to have a favourable effect. He adds that it is difficult to form an accurate estimate of its intrinsic value because of the element of suggestion, and also because some surgeons have performed this operation wholesale without paying due regard to the indications for it.

293. Some Faucial Anomalies.

S. COHEN (*Med. Journ. and Record*, September 3rd, 1924, p. 223) describes three anomalies of the mouth and fauces: (1) The styloid process may project into the tonsillar fossa and be discovered only after tonsillectomy. He remarks that the styloid process varies considerably in length, but the normal length is 1 inch; if exposed by tonsillectomy it does not delay healing nor require removal. (2) Arterial pulsation may be seen in proximity to the tonsil; the vessel involved being (*a*) a tortuous and aberrant internal carotid; (*b*) the common carotid trunk (when the internal carotid is absent); (*c*) the external carotid; (*d*) the ascending pharyngeal; or (*e*) the ascending palatine arteries. These abnormal vessels may add greatly to the danger of tonsillectomy; the possibility of their presence requires careful preliminary examination. (3) Supernumerary tongue. Cohen's patient was an infant, aged 10 days. Shortly after birth inspiratory dyspnoea was observed; this was relieved when the head was lowered. A body was seen in the pharynx attached to the left pharyngeal wall and resembling the tongue in appearance; its pedicle was attached behind the left posterior faucial pillar. When this was drawn forward the dyspnoea was relieved. The body was removed with a snare, and on histological examination was found to be structurally like the tongue.

294. Cervical Sympathectomy.

F. J. SMITH and R. D. MCCLURE (*Surg., Gynecol. and Obstet.*, August, 1924, p. 210) recall that cervical sympathectomy has been performed for angina pectoris by various surgeons since 1896. Jonnesco advocates resection of the entire cervical sympathetic chain below the level of the superior cervical ganglion, including the first thoracic ganglion. This operation has been performed under local anaesthesia alone or combined with gas and oxygen. After the resection the characteristic enophthalmos and pupillary miosis usually develop promptly on the side of the operation; occasionally there is also transient conjunctivitis on the same side. The authors point out that although unilateral or bilateral resection may greatly lessen the number and severity of the attacks, it must not be counted on to secure complete relief from pain, unless the first thoracic ganglion is included in the resection. The resection should be done on the side of greatest pain first, followed by a similar operation on the other side if complete relief is not obtained. The indications for operation are frequent and severe attacks necessitating the giving up of occupation; the main contraindication is existing or impending myocardial insufficiency. The authors record in detail two cases where this treatment was carried out with definite benefit but without complete cure.

Neurology and Psychology.

295. Progress in Psychiatry.

I. H. CORIAT (*Boston Med. and Surg. Journ.*, September 11th, 1924, p. 499), in a general review, observes that the old descriptive psychiatry of Kraepelin is being displaced rapidly by the newer interpretative psychiatry (Bleuler) which utilizes the psycho-analytical principles of Freud, though Kraepelin's classification of clinical types has outlasted those of other writers. Coriat regards Brill's translation of Bleuler's textbook as an important advance, particularly the conception of schizophrenic negativism. Coriat adds that, according to Bleuler, the predisposing causes of negativistic phenomena may be divided into: (1) Ambitendency, which sets free with every tendency a counter-tendency. (2) Ambivalency, which gives the same idea two contrary feeling tones, investing the same thought simultaneously with both a positive and negative character. (3) The schizophrenic splitting of the psyche. (4) Confusion and imperfect logic of general schizophrenic thought, rendering theoretical and practical adaptation to reality difficult or impossible. He quotes Bleuler as stating that in the psycho-analysis of hundreds of patients of schizophrenia none was without a sexual complex, and that in the majority it was a dominant symptom. Bleuler agrees with Freud's views on sublimation and repression of the sexual instinct. Coriat continues by pointing out that Karl Wilmanns of Heidelberg recognizes the importance of Bleuler's work on dementia praecox, and admits that Freud has exercised a tremendous influence and has materially contributed to modern developments, though feeling that this approach has been only partially successful in elucidating the symptomatology of schizophrenia. Coriat refers to the extensive investigation of focal infection and mental disease undertaken by Kopeloff and Kirby. These writers found that in 120 cases of various types—manic-depressive insanity, dementia praecox, psychoneuroses, etc.—the focal infections were removed in 58 cases, but this did not result in a higher percentage of recoveries than in the other group of 68 cases in which the focal infections were not treated. He concludes that while it is desirable to remove focal infections in mental patients, as one would treat any other physical disorder, it has not been shown that focal infection is the etiological factor in functional psychoses.

293. Salvarsan Treatment of Multiple Sclerosis.

H. SCHÄFGEN (*Deut. med. Woch.*, August 29th, 1924, p. 1178) has treated several cases of multiple sclerosis with salvarsan preparations, on the assumption that the disease is due to a spirochaete. In 21 cases of typical multiple sclerosis, with a negative Wassermann reaction in the blood and cerebrospinal fluid, he gave silver-salvarsan, the initial dose being 0.05 gram, and the final dose from 0.15 to 0.2 gram. Two injections were given every week, and the average total dose was 2.5 grams. In 13 of these 21 cases (62 per cent.) objective signs of improvement were demonstrable; the symptoms most amenable to this treatment were the spastic and paretic ones, the intention-tremor, nystagmus, and disturbances of the bladder and rectum. In an earlier series of cases treated in hospital during the past twenty years by other measures, such as baths, rest cures, electricity, and the administration of iodine, arsenic, and silver, and by injections of fibrolysin, the results were not so good. In this series there were 135 cases of multiple sclerosis, and only 34 of them (25 per cent.) showed objective improvement. The author has also given neosalvarsan in 19 cases, but has not seen any very encouraging results therefrom.

297. Paralysis of Brachial Plexus after Serotherapy.

J. LÉPINE (*Journ. de Méd. de Lyon*, June 24th, 1924, p. 351) reports two cases of this condition. The first, a man aged 30, of excellent health, had had an injection of antitetanic serum when wounded in 1915. In 1922 his right hand was crushed and he had another injection of antitetanic serum. Eighteen days later he experienced great pain in both arms, especially the right, with some contracture and very slight trismus. When Lépine saw the man three months after the accident the violent pains had gone, but there was still some pain and formication in the shoulders and arms. There was slight diminution of sensibility in both shoulders in the distribution of the fourth cervical root, and a marked motor impairment in the upper arms, but none in the forearms and hands. Tendon reflexes were absent in the upper limbs and diminished in the lower limbs. There was atrophy of the trapezius and deltoid, and some winging of the scapulae. The second case, a man aged 51, also of robust health, had an injection of antitetanic serum following a fall on his right shoulder. Eight days after the accident severe pain was felt in the shoulders and arms, the intensity being greatest in the right shoulder. Four months later he had no appreciable atrophy or definite paralysis, but the pain persisted in the shoulders, involving especially the trapezius and occipital muscles, and immobilizing the neck and the right shoulder. In Lépine's experience the prognosis in these cases is good, though their progress may be very slow. He does not think the phenomena are anaphylactic in their nature, nor, considering their rarity, that they are due to faulty serum—for example, the presence of insufficiently neutralized tetanus toxin. For mild cases he has found rest, sedatives at first, nerve tonics later, the cautious use of strychnine (arsenic is to be avoided), gentle massage, and light baths sufficient. For amyotrophic cases the continuous current is indicated. On account of a tendency to contracture faradism is contraindicated.

293. Progressive Lenticular Degeneration (Hepatolenticular Degeneration).

J. G. GREENFIELD, F. J. POYNTON, and F. M. R. WALSHE (*Quart. Journ. of Med.*, July, 1924, p. 385) give a useful summary of the clinical and pathological investigations of this affection, during the last ten years, based on 30 recorded cases. They also describe a further case, with a report of the pathological examination. The disease was first described by S. A. Kinnier Wilson in 1912, and named by him progressive lenticular degeneration (it is often described as Wilson's disease). The chief symptoms are: tremor (resembling that of paralysis agitans), rigidity, dysarthria, dysphagia, anarthria, spasmodic weeping and laughing, slight dementia; no qualitative changes in the reflexes, no true paralysis, no affection of sensation. The onset is in youth or early adult life, the duration is one to three years, and the disease is always fatal. Bilateral symmetrical degeneration of the lenticular and caudate nuclei of the brain, and in all cases marked multilobular cirrhosis of the liver (clinically latent), have been found by pathological examination. The investigations of the last ten years have shown that the changes are not invariably confined to the corpus striatum. Nevertheless, within the corpus striatum the brunt of the disease process (indicated by atrophy and degeneration of nerve cells and overgrowth of neuroglia) falls upon the putamen and to a less extent upon the caudate nucleus. The cardinal symptoms are muscular rigidity and tremor; but three main types of motor disorders may be met with—rigidity alone, rigidity with tremor, or torsion spasm. In the new case reported, a girl of 14 developed progressive dysarthria, inability to keep the mouth closed, dribbling of saliva, mask-like countenance, spasmodic weeping and laughter, impaired movements of face and tongue muscles, flexed attitude of arms and hands. There was no paralysis, and the reflexes and sensation were normal. Later she developed complete anarthria, rigidity of face and arm muscles, flexion of trunk and limbs, tremor of hands, and finally rigidity of legs with slow flexion-extension movements. Death occurred in twenty months. The liver presented multilobular cirrhosis of a rich cellular type. In the brain marked shrinkage of the corpus striatum was found, involving the putamen of the lenticular nucleus and the caudate nucleus. Microscopic examination revealed degeneration of nerve cells and increase of neuroglia in these regions.

Obstetrics and Gynaecology.

299. Blood Transfusion in Gynaecology.

O. KHOOR (*Zentralbl. f. Gynäk.*, August 2nd, 1924, p. 1714) denies the value of blood transfusion in those acute and chronic anaemias which are gynaecological in origin. He has investigated the red blood corpuscle count and the haemoglobin index very thoroughly, and has examined the patient's blood before transfusion and subsequently at intervals of one, two, four, and six hours, then at daily intervals, and finally on alternate days. In the acute cases, which, for the most part, were ruptured extrauterine gestations, he finds that the improvement in colour, the fuller and more rhythmic pulse, and the slower and deeper respiration, which are described by several observers as the result of transfusion, are only transitory, if they occur at all, and he thinks they are probably due to the Trendelenburg position and ether anaesthesia. In cases not transfused, as well as in some of the transfused, the haemoglobin index rose appreciably some days after operation. He avers that the transfused blood does not possess full physiological properties, especially as regards gaseous exchange, but on account of the serum acts similarly to transfused saline solution. In all his non-transfused cases (45) the patient recovered from the shock without any transfusion being required. Rigors followed transfusion in all cases, and the temperature remained high for six days in some cases, though usually it fell on the day following transfusion. For these reasons, and also on account of haemoglobinuria (a dangerous complication) occurring in some cases, the author does not recommend transfusion, the effect of which seems to him to be at the best transitory only, except in a few specially selected cases. In the chronic cases of anaemia due to fibroids, chronic metritis, etc., similar results were obtained and rigors again occurred, followed by cyanosis, breathlessness, and severe headache in many cases. Instead of transfusion in such cases the injection of a small amount of blood several weeks after cessation of bleeding has proved very beneficial. No case was seen for which transfusion was an absolute necessity.

300. Diagnosis of Early Ectopic Pregnancy.

A. SIREDEY (*Journ. de Méd. et de Chir. Prat.*, September 10th, 1924, p. 615) states that the pain associated with unruptured ectopic gestation is characterized by its constant presence during the waking hours, even when the patient is lying down, and by its stationary position in a strictly limited portion of the pelvis. Vaginal haemorrhage in the early stages is slight, almost continuous, and augmented by exertion. Both pain and haemorrhage increase with the passage of time. These symptoms, especially if accompanied by breast symptoms and signs, point to ectopic pregnancy, even if—as is often the case—no history of a missed period is forthcoming. In cases of tubal as of uterine pregnancy bimanual examination shows enlargement of the uterus and softening of the cervix; but in the first-named condition a juxtauterine tumour is palpable in one or another vaginal cul-de-sac. Diagnosis from adnexal inflammatory conditions is particularly difficult when the tumour has fallen in the pouch of Douglas. In this connexion it is to be remembered that patients suffering from adnexal inflammation do not often conceive; and that the presence of a unilateral tumour, and the absence of muco-purulent discharge, of pyrexia, and of leucocytosis, point to the existence of a tubal pregnancy.

301. Cancer of the Uterus and Pregnancy.

A. MAYER (*Deut. med. Woch.*, July 25th, 1924, p. 1003) publishes statistics controverting the popular view that carcinoma runs a peculiarly malignant course when associated with pregnancy. Among about 1,000 cases of carcinoma of the uterus the author has seen 31 cases in which it occurred during, or very shortly after, pregnancy, and these cases were certainly not characterized by great malignancy.

The statistics of Martius confirm the author's views: of 18 cases of carcinoma of the cervix 88.9 per cent. were operable, whereas of 725 non-pregnant cases of carcinoma of the cervix only 65.3 per cent. were operable. Of 12 cases of carcinoma of the cervix associated with pregnancy and operated on, only 25 per cent. relapsed, whereas a relapse occurred after an operation in as great a proportion as 48 per cent. of the 340 cases of carcinoma of the cervix not associated with pregnancy. Turning to the treatment of carcinoma of the uterus and the respective merits of *x*-ray treatment before or after an operation, the author argues in favour of *x*-ray treatment before operation. This procedure arrests the superficial decomposition of the growth and banishes the discharge, with the result that the risk of post-operative peritonitis is reduced. Among 67 cases, several of which were given pre-operative *x*-ray treatment, there was an operation mortality of only 7.4 per cent., the incidence of peritonitis being only 4.4 per cent. As the operation mortality without pre-operative *x*-ray treatment usually ranges from 10 to 20 per cent., pre-operative *x* ray treatment marks a definite advance.

302. The Ovaries after Hysterectomy.

ALICE F. MAXWELL (*Journ. Amer. Med. Assoc.*, August 30th, 1924, p. 662) analyses in detail the end-results of 500 hysterectomies. In 329 cases the ovaries were removed, while in the remaining 171 cases they were retained. Post-operative vasomotor symptoms occurred in 80 per cent. of the former class, while in those patients whose ovaries were retained vasomotor disturbances occurred in 42 per cent. only. The disturbances were classed as "severe" in 30 per cent. of the former and in 12 per cent. only of the latter. The average duration of vasomotor disturbances was practically identical in the natural menopause (2.5 years), in hysterectomy with removal of ovaries (2.7 years), and in hysterectomy with retention of ovaries (2.25 years). In 11 per cent. of these cases of vasomotor disturbance the symptoms persisted for a period of from four to seven years, contradicting the impression that these phenomena are transient. The retention of ovarian tissue appeared to be a distinct advantage to the patient: in only 7 per cent. of the 171 cases in which the ovaries were retained was there any subsequent ovarian enlargement, and in only two cases was there transient pain. In every case pain and swelling disappeared within six months. No neoplastic degenerations were found nor were any secondary operations performed in the entire series. The author draws the following conclusions: (1) The frequency of vasomotor symptoms after hysterectomy is increased when both ovaries are removed. (2) The frequency of symptoms with conserved ovaries after hysterectomy compares favourably with that of the normal menopause. (3) Severe vasomotor symptoms are more common without than with ovaries. (4) The onset of delayed symptoms indicates that a definite number of conserved ovaries will atrophy within a year after operation. (5) The average duration of symptoms of the normal and surgical menopause is about two and a half years. (6) Women with a low haemoglobin index are more likely to develop post-operative disturbances. (7) The frequency of symptoms depends largely on the healthiness or unhealthiness of the retained organs. (8) Retained healthy ovaries are not susceptible to degeneration.

Pathology.

303. Insoluble Bismuth in the Prevention of Syphilis.

W. KOLLE (*Deut. med. Woch.*, August 8th, 1924, p. 1074) records experiments with mercury and bismuth given to rabbits previous to inoculation with syphilis. It was anticipated that the two metals would be equally effective in aborting experimental syphilis, but it was found that mercurial preparations were comparatively inert. When, however, twenty-six rabbits were given intramuscular injections of insoluble preparations of bismuth, which remained as depots in the body, artificial inoculation of the testicles with the spirochaetes of syphilis never led to the development of a chancre, even when the interval between the injection of bismuth and the attempted inoculation was as long as two to fifteen weeks. The *x* rays showed that such insoluble preparations of bismuth as the carbonate remained as depots in the muscles for months. Control tests were carried out with sixty-eight rabbits who were not given a preliminary intramuscular injection of an insoluble salt of bismuth, and 94 per cent. of these rabbits developed a primary chancre. Rabbits given injections of easily absorbed preparations of bismuth were found not to be subsequently immune to experimental inoculation with syphilis. The author recognizes the possible importance of these observations on the prevention of syphilis in man, but he insists on the need for caution and not assuming that these observations on rabbits are applicable to man. He also points out, in connexion with the prophylactic administration of arsenical preparations, that the failure of a typical chancre to appear is not proof positive that a mild, abortive, or latent infection with syphilis has not occurred.

304. Production of Ramifications in Diphtheria Bacilli.

IN the course of their research into the production of diphtheria toxin anaerobically, L. MARTIN, G. LOISEAU, and V. GIDON (*C. R. Soc. de Biologie*, July 5th, 1924, p. 332) made cultures of diphtheria bacilli in Martin's broth covered by liquid paraffin. They found that at the junction of the broth and paraffin a thin bacillary layer developed which grew thicker subsequently, showing no tendency to break up and fall to the bottom of the tubes even at the end of several months. At the end of twenty-four hours the bacilli in this layer were of the normal type, but on the second day they became elongated and lateral branches appeared. About the fourth or fifth day of incubation these ramifying forms reached their maximum development. They were very numerous, and were often grouped together, though some remained isolated and stained deeply by Gram's method, particularly at the extremities, which appeared club-shaped. The greatest length of the isolated organisms was 11.3μ. From the eleventh to the thirteenth day the appearance was very little changed, except that the length and breadth of the filaments had increased; by the sixtieth day, together with the ramifying forms there were irregular circular masses, stained by Gram's method and separated by unstained areas. This appearance remained unaltered after five months' incubation. If, however, the cultures after seven days' incubation were kept at the laboratory temperature the appearance underwent no change at first, but at the end of five months the ramifying forms had almost completely disappeared, leaving some Y-shaped bacilli, some elongated forms, and numerous bacilli of ordinary appearance. Cultures taken from this layer at varying intervals up to the end of five months and inoculated on coagulated serum gave in less than twenty-four hours numerous colonies of diphtheria bacilli of the normal type. The interpretation of the appearance of these ramifications is admittedly difficult, but the authors differ from the majority of observers, and believe that they are not to be considered evidences of degeneration, since their development is regular, their staining properties are retained, and these forms appear in such large numbers.

305. The Metachromatic Granules of the Diphtheria Bacillus.

STUDYING the nature of the metachromatic granules formed by the Corynebacteria, K. L. PESCH (*Centralbl. f. Bakt.*, July 15th, 1924, p. 208) endeavoured to ascertain the chemical constitution of these bodies. Since there is a considerable amount of evidence that they consist of nucleic acid, free or in combination, he attempted to grow diphtheria and diphtheroid bacilli on a medium free from phosphorus. This medium was very difficult to prepare, and even after several attempts he was unable to rid it of every trace of phosphorus. However, he found that though this trace was sufficient to enable growth to occur, it was not enough to allow of the formation of metachromatic granules. He then tried growing bacilli which were naturally poor in metachromatic granules on a medium which was enriched with phosphorus or with nuclein. Compared with control media to which neither of these bodies had been added, the formation of metachromatic granules was rather better on the enriched media. He concludes that the production of volutin—the substance of which the granules consist—can be increased by the addition of either nuclein or phosphorus, and that therefore it is probable that volutin is built up out of nucleic acid combinations. Studying further the quantitative production of granules on different media, he found that whereas the granule formation is good on blood agar, and still better on Levinthal agar, it is extremely poor on ascitic fluid agar. Now the actual growth of the organism is very good on this last medium; on the other media it is not so good, particularly on Levinthal. He concludes, then, that there is an inverse relationship between the growth of the bacillus on a given medium and its production of metachromatic granules; to this generalization Loeffler's medium is a partial exception. Finally, he endeavoured to find a medium which should be more suitable for use than the present Loeffler serum. Large numbers of nose and throat swabs were streaked on different media, including Klein's serum-alkali-albuminate-agar, blood agar, and Loeffler's medium, and the number of positive diphtheria results calculated. It was found that the highest percentage of positives was obtained by growth on Loeffler's serum, and the author concludes, therefore, that at present there is no medium which is more suitable for general use than this.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

306. Hemiplegia in Typhoid Fever.

G. TIZIANELLO (*Il Policlinico*, Sez. Prat., August 18th, 1924, p. 1065) states that among more than a thousand cases of typhoid fever admitted to the typhoid pavilion of the civilian hospital at Venice in the course of the last seven years only two developed hemiplegia. Only a few instances of this complication of typhoid have been recorded in medical literature, all of which ended in recovery, so that it was impossible to determine the nature of the causal lesion. Tizianello's first case occurred in a woman, aged 29, who developed left hemiplegia, followed by gangrene of the left arm in the third week of a severe attack of typical typhoid fever. Death took place after about five weeks' illness, and the autopsy showed an area of softening in the basal ganglion on the right side involving the putamen part of the globus pallidus and internal capsule and a small portion of the external capsule. The second case was in a girl, aged 18, who on the fifth day after the temperature had become normal, and on the thirtieth day of disease, complained of headache, and a few hours later suddenly developed right hemiparesis. Almost complete recovery eventually took place. Tizianello regards the process as thrombotic in both cases. He thinks that probably the primary cause of the hemiplegia is always typhoid arteritis. The similarity of the two cases suggests that the typhoid toxins may have their seat of activity in the grey nuclei of the base, probably the putamen.

307. High Blood Pressure.

ACCORDING to E. KYLIN (*Klin. Woch.*, September 16th, 1924, p. 1712) the disturbance in the autonomic nervous system is the point to which treatment should be directed in cases of high blood pressure. A rest cure should be tried first, since this often gives good results, though when the patient returns to his former occupation the pathological condition may reappear. For some time the author has treated essential high blood pressure by calcium salts and atropine given by the mouth. Theoretical grounds for this treatment are the supposed predominance of the vagus nervous system over the sympathetic nervous system in essential hypertonus (as indicated by the adrenaline reaction) and the view that the calcium ions bring about stimulation of the sympathetic system. It has been shown also that in essential hypertonus the calcium of the blood is diminished. By the administration of atropine the author endeavours to restore the equilibrium between the vagus and sympathetic nervous systems. Four cases are recorded in detail illustrating the improvement under the administration of calcium chloride and atropine four times a day. These patients were in hospital, but similar improvement was obtained in out-patients, and the author considers that the treatment is worthy of further trial.

308. Three-day Fever with Rash in Children.

E. GLANZMANN (*Schweiz. med. Woch.*, June 26th, 1924, p. 589) discusses the diagnosis of this condition, a comprehensive account of which was first published in 1910 by Zahorsky, who called it "roseola infantilis." The author has studied it since 1918 in Bern, and publishes several case reports to illustrate its most salient clinical features. The disease is practically limited to children between the ages of 6 months and 2 years; it begins with three days of comparatively high fever, the fall of which by crisis is rapidly followed by the appearance of a rash resembling that of scarlet fever, measles, or rubeola. During the three days of fever the patient is restless, sleepless, and obviously in pain; children old enough to speak complain of headache. In this pre-eruption stage of the disease there is only one reliable guide to the diagnosis—a leucocyte count. The author points out that it is remarkable that such a brief and mild exanthematous disease should have so profound an influence on the leucocytes. Great leucopenia occurs, associated with a marked relative increase in the number of the lymphocytes to 80-90 per cent. of all the leucocytes. The number of the polynuclear leucocytes, both absolute and relative, is greatly reduced, and the few polynuclears which remain often show degenerative changes; a few myelocytes and metamyelocytes may be found. The relative number of the large mononuclear leucocytes is increased. With regard to the infectivity of this disease, the author has not seen it in more than one child of the same family at the same time, perhaps because the age limit of this disease is comparatively short.

309. Abortion of Measles by the Serum of Convalescents.

S. BUTTENWIESER (*Deut. med. Woch.*, June 27th, 1924, p. 876) publishes several tables illustrating the importance of measles as a remote or immediate cause of death among infants in hospital. Almost one-sixth of all the deaths in a children's hospital during 1922 were due to measles contracted in the hospital. He recommends the adoption of the Degkwitz system of injecting the serum of convalescents into children who have been exposed to infection, and who may possibly be in the early stage of the incubation period. He reports the successful use of this prophylactic measure on several occasions. According to him, as much as 100 c.cm. of blood can be taken from a convalescent child, if not too young, this quantity being sufficient for twelve children. He urges the medical authorities to organize a system of collecting the serum of convalescents and to educate both the public and the medical profession as to its value. Munich and Stuttgart have already organized the distribution of this serum, and Buttenwieser maintains that if such organization were ubiquitous thousands of infants could be saved every year.

310. Epidemic Encephalitis in Sweden.

E. BERGMAN (*Hygiea*, July 15th, 1924, p. 426) states that about 2,500 cases of epidemic encephalitis have already been notified in Sweden, and that more than half of the cases occurred in 1921. January, 1921, marked the culmination of the epidemic, and there were as many as 520 new cases in this month. About 500 cases were notified in 1923. A study of 67 cases in Upsala was made by the author, who found that in about 50 per cent. the onset of the disease was marked by vague febrile symptoms. In no case was its onset insidious, and only in 2 cases were there general symptoms without fever at the onset. In as many as 18 cases lethargy and paralyses of the ocular muscles occurred at the beginning of the disease. The cranial nerves and ocular muscles were affected in 85 per cent., and in most of these cases the lesions of the cranial nerves began very early. Indeed, in some cases the disease was first detected when the patient went to an eye hospital on account of diplopia. Most of the facial paralyses passed off rapidly. The amyostatic symptom-complex, or Parkinsonism, was observed in as many as 29 cases. Ten cases terminated fatally, and only 15 of the 67 patients were cured completely, though another 10 patients recovered sufficiently to resume full work. The prognosis was worse and the mortality higher for the hyperkinetic than for the lethargic cases. It was often noticed that neurasthenic and psychasthenic conditions developed as sequels, and either insomnia or persistent drowsiness continued long after the onset of the disease. The author expresses considerable pessimism with regard to the various methods of treatment tried.

Surgery.

311. Congenital Duodenal Occlusion.

J. M. SMELLIE (*Brit. Journ. Child. Dis.*, July–September, 1924, p. 192) records three cases of this rare condition which he has seen during the last year. Two died within a few days of birth, as is the almost invariable rule, but one case lived for nearly three months. Only three cases on record have survived longer. In Keith's case, where the duration of life was nine months, the autopsy showed that the occlusion was complete, but in Buchanan's case, which lasted for eighteen months, and in Cautley's case, extending over twelve months, the atresia was incomplete. The site of the occlusion in Smellie's first case was just below the opening of the common bile duct, of which type there are about twenty-three recorded cases, and in the second case the duodeno-jejunal flexure was the site of occlusion, of which type eleven instances have been observed. In the third case the occlusion would seem to have occurred just above the opening of the common bile duct, but in addition there had been a complete interruption in the continuity of the gut, and the second part of the duodenum appeared to have taken origin from the junction of the common bile duct and the pancreatic duct. No previous examples of this variety appear to have been described. While a developmental origin appears to be the most probable explanation of the condition in the majority of cases, some are probably due to a localized foetal peritonitis, or foetal volvulus, especially

those occurring at the duodeno-jejunal flexure. In favour of the developmental theory is the presence in a small percentage of cases of other congenital abnormalities. One of Smellie's cases had an imperforate anus, and in another the gall bladder was absent. Relief for the obstruction can only be obtained by operation, which was successful in cases recently described by Jewesbury and Page and Hutchison.

312. Cholecystenterostomy.

F. G. DU BOSE (*Surg., Gynecol., and Obstet.*, September, 1924, p. 295) considers that the results of gall-bladder surgery are unsatisfactory, repeated operations for recurrence being a reflection on surgical efficiency. He records his experience with cholecystenterostomy in twenty cases covering a period of eleven years, and insists that since the gall bladder concentrates bile, secretes mucus, and is a reservoir, it should be conserved whenever possible. Cholecystenterostomy has been considered hitherto an operation of necessity rather than of choice; it remains to be seen whether it may not be rather the operation of choice. Du Bose considers that it is indicated in common duct obstructions in patients who are "poor surgical risks," also in jaundice secondary to diseases of the liver and pancreas causing common duct obstruction. In perforated duodenal ulcer he finds that it promotes healing of the ulcer by bathing it continuously in the alkaline bile. In cases of stricture of the bile ducts he prefers it to choledochotomy or plastic surgery, being simpler, safer, and equally effective. The operative technique recommended is the formation of an anastomosis between the gall bladder and stomach round a rubber tube. After the suturing is completed an omental graft is placed round the suture line for complete protection. The anastomosis may be made between the stomach or the duodenum. This operation is contra-indicated in cancer of the gall bladder, in cases of gangrenous or atrophic cholecystitis, and also in the presence of cystic duct occlusion or obstruction due to causes other than stone.

313. Depressed Fracture of Zygoma.

J. C. LEHMANN (*Zentralbl. f. Chir.*, September 13th, 1924, p. 2016) states that there are very few recorded cases of this injury. Lehmann's patient was struck on the left cheek by an iron-headed "life preserver." When admitted there was a depression over the zygoma as large as the tip of a finger, but there was no external wound nor could crepitus be felt. No discoloration of the skin was present around the depression, and the pain elicited on pressure appeared to be so slight that it was difficult to believe that the injury had occurred on the preceding day. Next day, however, trismus was present, due to the pressure of the depressed bone on the temporal muscle. Under local anaesthesia a small incision was made along the upper border of the zygoma; through this opening the bone was explored and an elevator introduced; the depressed fragment was easily replaced and the patient was relieved immediately, as trismus completely disappeared. A small metal splint was applied externally, but it was not found necessary to wire the fracture, as recommended by Matas. There was no recurrence of displacement through the action of the masseter. Lehmann remarks that it is impossible to reduce a fracture of the zygoma by manipulation with a finger in the mouth, as the temporal muscle is an obstruction.

314. Intestinal Obstruction by Meckel's Diverticulum.

K. A. ROMBACH (*Nederl. Tijdschr. v. Geneesk.*, August 9th, 1924, p. 776) states that Meckel's diverticulum, which is the result of incomplete obliteration of the omphalo-enteric duct, is found 20 to 24 inches above the ileo-caecal valve. Albert saw it in 2 per cent. of the bodies examined by him, while P. Turner in 10,360 autopsies noted its presence in 81 cases, in 18 of which it was of pathological significance. The symptoms caused by Meckel's diverticulum may be classified as follows: (1) Those due to persistence of the duct and its permeability throughout its entire length. (2) Those due to intestinal obstruction by intussusception or strangulation of the intestine by the diverticulum. (3) Those due to infection or perforation of the diverticulum. The definite diagnosis of Meckel's diverticulum being the cause of these symptoms cannot be made, and the possibility only can be suspected. In a certain number of recorded cases appendicitis was supposed to be the cause of the symptoms. Rombach records a case in a previously healthy man, aged 31, who developed symptoms of intestinal obstruction which laparotomy showed were due to strangulation of the ileum by a Meckel's diverticulum one inch long. Symptoms of peritonitis developed the next day, necessitating a further operation, which showed that the condition was due to paralysis of the portion of the gut from which the diverticulum had been removed, but ultimately recovery took place.

Therapeutics.

315. Treatment of Tapeworm Infections.

H. IACOBAEUS (*Ugeskrift for Laeger*, September 11th, 1924, p. 669) reviews his experience of 132 cases of tapeworm infection, 125 of which were due to *Taenia mediocanellata* and 7 to *Bothriocephalus latus*. In only a few cases could such symptoms as colic, vomiting, and emaciation be definitely traced to the intestinal parasites; in most cases there were either no symptoms or the gastro-intestinal symptoms present were unconnected with the worms. In only one of the 7 cases of *Bothriocephalus latus* was there definite anaemia. Since the life of a cestode may be a matter of twenty-five to thirty years, he remarks that it is well to get rid of them and not to wait for their spontaneous expulsion or their death from old age. With regard to the amaurosis recorded in about 100 cases treated with extract of male fern, the author notes that most of these cases occurred in South Germany and Switzerland. In the Scandinavian countries no such accident has been recorded, although the extract of male fern is much used. A common cause of failure of treatment with this drug is the vomiting it provokes, and Iacobaeus has found that by giving veronal on three evenings in succession, before the male fern is given, the tendency to vomit is greatly reduced. He gives phenacetin with the veronal, 6 grains of each being taken every evening. To an adult 2½ drachms of the extract of male fern is given at 7 a.m. in a little wine. At 8.30 a.m. a powder containing calomel and jalap is given, and at 10 a.m. a strong infusion of senna leaves; he thinks it well to give aperients for a couple of days beforehand. By combining male fern medication with veronal and phenacetin in every case likely to be troublesome on account of vomiting, the author has considerably increased the proportion of cases in which the head of the worm was evacuated; in the period 1922–24 he treated 49 cases, in 40 of which the head of the worm was found.

316. Serum Treatment of Anterior Poliomyelitis.

F. S. CLARKE and A. G. DOW (*Journ. Amer. Med. Assoc.*, August 9th, 1924, p. 421) discuss the use of Rosenow's horse serum in the prevention of paralysis due to anterior poliomyelitis, and give brief accounts of six cases in which it was successfully employed. They urge the necessity of recognizing this infection before the onset of paralysis, and attach special significance to the following diagnostic points: pyrexia rarely over 101° F., neck rigidity, and inflamed tonsils and faucial pillars. Hyperaesthesia and resistance to examination are also said to be important symptoms; Kernig's sign, if present, is suggestive, but its absence does not rule out the disease; and the patellar reflexes are usually exaggerated, but vary from day to day. The authors do not consider that the cell count of the spinal fluid offers a reliable basis for diagnosis. In each of the six cases reported rapid improvement followed the injection of Rosenow's serum, and recovery was complete without paralysis.

317. Sulfarsenol in the Treatment of Congenital Syphilis.

G. ÅHMAN (*Hygiea*, August 15th, 1924, p. 481), who is in charge of a Welander hospital for congenital syphilis in Sweden, points out that in such an institution it is impossible for the medical officer to give all the necessary injections of anti-syphilitic remedies, and in order that nurses may give them they should not have to be administered by the intravenous route. For this and other reasons the author has found salvarsan, neosalvarsan, and various other arsenical preparations unsatisfactory; but he has found sulfarsenol, a French preparation introduced by Lehnhoff-Wyld, and closely related to neosalvarsan in its chemical formula, almost ideal. Injected subcutaneously as a 6 per cent. aqueous solution it causes little pain and does not leave a persistent infiltration. The author has given about 300 injections to 26 children, 19 of whom had previously been treated with other preparations of salvarsan to which the disease had proved more or less refractory. The success of the sulfarsenol injections was the more striking as most of the patients had shown themselves to be refractory to salvarsan.

318. Tuberculin Treatment in Infants.

R. OSSWALD and H. SCHÖNFELD (*Monatschr. f. Kinderheilk.*, August, 1924, p. 413) have endeavoured to determine (1) the clinical results in young children of two of the specific forms of treatment for tuberculosis, and (2) the effect of the treatment on the cutaneous sensitivity of the patients to tuberculin (von Pirquet test). Ponndor's method of vaccinating the patients repeatedly with a prepared serum was applied to 36 children suffering from tuberculosis of the lungs, lymph glands, bones, or abdominal viscera. The results were watched for periods varying from three to eighteen months,

but no difference could be observed clinically between the patients who received this specific treatment and those who did not. In the absence of clinical manifestations the authors tried to determine whether the reaction of the patients to the biological von Pirquet test showed any variation, and they applied the test to 23 children before, during, and after their treatment according to Ponndor's technique. In 15 cases the cutaneous sensitivity showed an unfavourable alteration, in 2 it was unchanged, and in the remainder there were minor alterations, first in one direction and later in the other. Moro's method of inunction was applied to 22 children suffering from tuberculosis of the peritoneum, lymph glands, or lungs, and, as before, the patients were kept under observation for many months. From clinical observations the authors were unable to convince themselves that the treatment had any therapeutic value. They again resorted to the von Pirquet test, and found that in 17 out of the 22 children the local cutaneous reaction showed no definite change, in 4 it was altered unfavourably, and in only one case favourably. It cannot therefore be said from these results that Moro's treatment has any effect on the cutaneous sensitivity to tuberculin.

Dermatology.

319. Herpes Zoster in Hodgkin's Disease.

H. K. PANCOAST and E. P. PENDERGRASS (*Amer. Journ. Med. Sci.*, September, 1924, p. 326) consider that herpes zoster is present in Hodgkin's disease with sufficient frequency to justify its inclusion among the skin manifestations of that disease. Notes are given of four cases of Hodgkin's disease, and one of ovarian sarcoma, in which an attack of herpes zoster occurred. While a certain number of cases are the result of a propagated neuritis, the zoster being due to an inflammatory irritation of a nerve transmitted to the cutaneous elements along its distribution, such a condition may also arise from compression by a tumour. In secondary malignant disease of the spine and in new growths of the chest herpetic eruptions may appear along the course of the nerves involved in the compression. In the first case of Hodgkin's disease a typical zoster on the right side, lasting about eight weeks, was associated with palpably enlarged glands in the right kidney region, while in the second a severe right intercostal herpes occurred without any demonstrable mediastinal enlargement, the disease being followed by keloid formation; in the third case, during a slight attack of left intercostal zoster, the hilum shadows were enlarged, and in the fourth the herpes was situated along the distribution of the right femoro-cutaneal nerve without any glandular enlargement in the inguinal or pelvic regions. In the case of ovarian sarcoma general peritoneal metastasis was found at operation, and herpes zoster involving the left eleventh and twelfth intercostal and first lumbar nerves developed and lasted eight weeks, *x*-ray examination of the chest and spine being negative as regards evidence of a new growth. The patient later developed a mediastinal metastasis, but improved under *x*-ray treatment in spite of the extensive involvement; she was still alive. In the four cases of Hodgkin's disease the severity did not appear to have any relation to the eruption, which was probably due to irritation caused by the proximity of the glandular enlargement to the ganglion.

320. Symmetrical Lines on the Back in Tuberculosis.

OLGA ELIASCHEFF (*Ann. de Derm. et de Syph.*, June, 1924, p. 355) notes that cases have been recorded in which pulmonary lesions in young subjects have been accompanied by the appearance on the thorax of lines of reddish colour, and that in the instances hitherto recorded these lines have been located on the side opposite to the pulmonary lesion. She now reports a case of pulmonary tuberculosis where the lines were observed on both sides, although the lesion was in the left lung. There were nine rows on the right side of the back and six on the left; they were symmetrical, and corresponded in direction with the zones of cleavage of Langerhans. Internally they were limited by the vertebral column, externally by the axillary border, and they extended from the seventh rib above to a line drawn transversely three fingerbreadths above the iliac crest below. They were disposed in oblique bands, some of which were interrupted by areas of healthy skin; their length was from a third of an inch to four inches; their breadth was just over an inch. The colour was bright red, the surface finely folded, the edges well defined. Palpation gave the impression of a skin rather thin and soft through which blood vessels were visible in places. The horny layer was poorly developed in parts, and from some places the granular layer was absent; where present the latter was represented by fine cells filled with minute granulations. While pigment was lacking in the lesions the adjoining basal cells were richly pigmented. The connective tissue appeared normal, but round the vessels of the chorion there was a dense infiltration, composed for the most part of round cells and of some epithelial cells and fibroblasts. The elastic tissue in the papillae and the chorion was broken, and was so attenuated in the upper layers of the latter as to be represented by fine granulations; but in the healthy parts it seemed to be a denser network than normally. The hair follicles, sebaceous glands, and sweat glands were normal. The author discards the theory of a mechanical cause for the lesions—overdistension of the skin—nor does she favour the view that the condition may result from a weakness of the integument—congenital or acquired in consequence of toxic infection. The lesions have been observed in areas where there has been an actual shrinking, and have made their appearance at the onset of shrinking. She considers them to be a direct consequence of fragmentation of the elastic tissue of the skin attributable to trophic trouble, and suggests that as it is reasonable to suppose that this tissue depends for its nutrition on a gland or glands of the endocrine class, the condition may be due to a derangement of endocrine mechanism.

321. Pigmentation of the Skin.

S. BANG (*Ugeskrift for Laeger*, July 17th, 1924, p. 543) suggests that light precipitates as pigment in the skin a substance which, if not thus linked to the skin, is capable of being toxic. Pigmentation, he thinks, depends on two factors—a propigment derived from the blood and a ferment in the epithelial cells which converts propigment into pigment. He states that this propigment is related to adrenaline, and is similar to, or identical with, dioxyphenylalanin or "dopa." This "dopa" can be converted into pigment artificially by various oxidizing agents. Not only is the chemical formula of "dopa" very similar to that of adrenaline, but there are many other points of similarity. When the suprarenals are functioning imperfectly increased pigmentation of the skin occurs in those areas where light normally produces pigmentation. The author concludes that "dopa" is a by-product in the secreting of adrenaline by the suprarenals, and that the excessive pigmentation of Addison's disease is due to an overproduction of "dopa."

Obstetrics and Gynaecology.

322. Kielland's Forceps.

G. BARBARO (*Gynécol. et Obstét.*, 1924, x, 1, p. 36) describes and illustrates the obstetric forceps introduced in 1915 by Kielland. Many reports, mostly laudatory, have appeared in German literature, but the forceps has scarcely been noticed in English, American, or French publications. He concludes that although the instrument is not ideal nor universally applicable as was claimed, it is yet of considerable use in certain cases, and deserves systematic trial in countries other than that of its origin. The blades of the forceps have almost no pelvic curve, and the articulation of the blades is contrived so as to allow a certain freedom of interplay in the longitudinal direction, variation being possible in the height of application to the foetal head. The instrument is chiefly intended for high forceps application, and is reported to be particularly suitable for seizing the biparietal diameter, whatever its relation to the pelvis may be. It is generally conceded that it is admirably adapted for rotating the head, but opinions differ as to its efficacy as a tractor.

323. The Dystrophies of Puberty.

G. BOULANGER-PILLET (*Journ. de Méd. et de Chir. Prat.*, September 10th, 1924, p. 646) classifies the dystrophies of puberty as those in which changes in the skeleton or stature predominate and those in which the weight increases owing to abnormal obesity. In the first group the dystrophy of Hutinel, which is more frequent in males, is the exaggeration of a normal physiological process; the excess of growth affects the lower limbs especially, and the extremities are lengthened without showing the thickening which occurs in acromegaly. In girls ovarian disturbance is signified by amenorrhoea, oligomenorrhoea, or menorrhagia. There is a coincident disturbance of other functions with generalized muscular insufficiency. The dystrophies accompanied by adiposity are more frequent in females; in certain cases a transitory dystrophy disappears after puberty, but in others the malady increases progressively with advancing age, marriage, pregnancy, and lactation. The etiology of these conditions is uncertain. A morbid condition of the pituitary body has been blamed; little evidence of this, however, is gained from radiological or ophthalmological or biological tests, and recent work tends to show that the majority of the

so-called hypophyseal signs indicate in reality morbid conditions in the tuber cinereum and adjacent regions. In several cases the author has found other signs pointing to morbid cerebral conditions—for example, convulsive crises, generally epileptiform, and severe intractable headache. Almost constantly he has found that the cerebro-spinal fluid shows a meningeal reaction. In a certain number of cases signs of syphilis have been present, pointing to a therapeutic possibility which it is important not to neglect. It is probable that nerve alterations in the floor of the third ventricle play a prominent etiological part.

324. Pregnancy and Acute Appendicitis.

A. G. J. HERMANS (*Nederl. Tijdschr. v. Geneesk.*, August 23rd, 1924, p. 1004), who records six personal cases with a review of the literature, states that out of 1,000 operations for appendicitis performed by Kümmell, two occurred in the third or fifth month of pregnancy, while among 2,000 cases of appendicitis seen by Sonnenburg three occurred in pregnancy and one in the puerperium. Szenes states that, among 325 women operated on at the Zürich Surgical Clinic in the period 1919-21, four, or 1.14 per cent., were pregnant. The association of pregnancy and appendicitis is thus a rare condition. While some writers, such as Renvall and Fraenkel, regard the occurrence of appendicitis in pregnancy as a mere coincidence, others, such as Sonnenburg, Karewski, and Pinard, consider that pregnancy predisposes to exacerbations of chronic appendicitis. Others again, such as König, Boye, and Runge, look upon pregnancy as a safeguard against appendicitis, inasmuch as the hyperaemia of the pelvic organs occurring in pregnancy favours the absorption of the infective material present in the appendix and thus prevents the outbreak of an acute attack. Boyé reports 12 illustrative cases from Engström's clinic in which chronic appendicitis did not relapse during pregnancy. The prognosis of appendicitis in pregnancy is generally regarded as very grave. Not only is there the possibility of perforation of the appendix and septic peritonitis, but there is a special danger owing to the prospect of abortion or premature delivery and greater likelihood of puerperal sepsis. Of 42 cases of appendicitis occurring in all stages of pregnancy reported by Füth, 22 were fatal. According to Halban, the mortality from appendicitis, which is usually 12 per cent., ranges from 31 to 59 per cent. in pregnancy, and Pribram estimates the mortality from appendix peritonitis in pregnancy at 50 per cent. Hermans agrees with De Lee that appendicitis during pregnancy should always indicate immediate operation, and that even in cases of doubt operation is the safer course. The earlier the operation is performed the better the prognosis is for the mother and the child. In the puerperium the prognosis is graver the earlier the attack occurs after delivery, as the chances of puerperal infection are then greater.

325. Pregnancy and Disease of the Heart.

S. PRASSULIDES (*Arch. f. Gynäk.*, July, 1924) shows that all hearts, whether normal or damaged, increase in size during pregnancy. He maintains that in many cases this hypertrophy is desirable, and that, contrary to the general opinion, the occurrence of pregnancy does not damage the prognosis in heart diseases. He goes further and states that the appearance of a heart lesion, or even commencing failure of compensation, is not necessarily an indication for interfering with the pregnancy. If compensation is established, if the heart muscle is active and undamaged, and more especially if there are no other complications, he believes that there is no danger, either immediate or remote. It is only when such complications as recurrent endocarditis, nephritis, or advancing tuberculosis are added to an existing heart lesion that danger occurs. Women with heart lesions (of these the worst are mitral) should be kept under medical supervision during the whole of their pregnancy and should never be left to the care of a midwife. If the pregnancy is terminated, special attention must be paid to asepsis, in view of the dangers of recurrent endocarditis, thrombosis, and haemorrhage.

Pathology.

326. A Scarlet Fever Toxin.

J. D. TRASK, jun., and F. G. BLAKE (*Journ. Exper. Med.*, September, 1924, p. 381) show that a toxic substance can be demonstrated in the blood of patients acutely ill with scarlet fever, a similar substance being also found in the urine of a proportion of these patients. This investigation was undertaken to provide further evidence in support of the conception that scarlet fever is due to a local infection of the throat by a special type of *Streptococcus haemolyticus*, which is capable of producing a soluble toxic substance, that this toxic substance is absorbed from the throat and causes the general manifestations of the disease, and that immunity, whether natural or acquired, is antitoxic in nature, and can be determined in an individual by finding out whether or not his serum blanches the rash in a patient with scarlet fever. The serum of patients acutely ill with scarlet fever was injected intracutaneously into two classes of persons—those whose serum failed to blanch the rash in scarlet fever and those whose serum blanched the rash. In the former class a reaction was noted, consisting of a bright red local erythema, varying from 20 to 70 mm. in diameter, of one to four days' duration. The severer reactions were moderately indurated and tender, and were followed by pigmentation and desquamation. Control injections in persons whose serums blanched the rash in scarlet fever caused no reaction. In one case in which daily investigations were made the toxic substance was found in the blood from the second to the fifth day, and in the urine from the third to the sixth day. The toxic substance was not neutralized by mixture with a human serum which gave a negative blanching test, but was readily neutralized by a human serum which gave a positive blanching test. It was unaffected by normal horse serum, but was totally neutralized by the scarlatinal antistreptococcic serum of Dochez.

327. Carnivorous Diet and Infection with Intestinal Protozoa.

R. W. HEGNER (*Amer. Journ. Hyg.*, July, 1924, p. 393) has made a careful study of the literature, and has himself carried out some experimental work on the relationship between a carnivorous diet and the extent of protozoal infections of the intestine. Reviewing the literature, he finds that intestinal protozoa in mammals are most abundant in rodents and ungulates, which feed almost exclusively on vegetation; that they occur frequently in those primates which are largely vegetable feeders, but that only on very rare occasions are they found in carnivorous animals. He fed three rats for 174 days on a carnivorous diet; all of them were found to be free from *Giardia muris* and *Trichomonas muris*, but two of them had a few specimens of *Hexamitus muris*; control rats from the same colony that had been fed on various diets, largely carbohydrate in nature, were well provided with all three of these flagellates. In another experiment 15 rats were fed on a carnivorous diet for one week, and were compared with 15 other rats fed principally on vegetable proteins and carbohydrates. It was found that in the former group of animals the numbers of *G. muris* decreased to one-tenth, and the numbers of *T. muris* to one-fifty-fourth of those present in the latter group. Examinations were then made of faecal specimens, at intervals during a period of seventeen days, from 12 carnivorous animals belonging to ten different species which were living in the Zoological Gardens at Baltimore; no protozoa of any kind were discovered except in one instance—that of a wild cat which harboured some giardia cysts. He considers that a carnivorous diet is unfavourable for the intestinal protozoa of mammals. Possibly this may be due, he thinks, to the putrefactive flora which occurs in the intestine when a carnivorous dietary is being given. At present he is working to test the value of a carnivorous diet in cases of human protozoal infection of the intestine.

328. The Leucocytes in Various Forms of Arthritis.

G. KAHLMETER (*Hygiea*, July 31st, 1924, p. 449) has investigated the numbers and proportions of the leucocytes in 169 cases of arthritis treated during the past seven years in two Swedish hospitals. The cases were classified in five main groups, according as they could be regarded as (1) acute rheumatic fever, (2) primary chronic polyarthritis with fever, (3) secondary chronic polyarthritis, (4) primary chronic polyarthritis without fever, and (5) arthritis deformans. The average mean leucocyte count in these five classes diminished uniformly from above downwards: it was 9,394 in the first class and 6,036 in the fifth class. If a leucocyte count of 6,000 to 7,000 be taken as the normal, the figures obtained by the author suggest that arthritis with fever is generally associated with leucocytosis. The differential count showed that the leucocytosis was mainly due to the lymphocytes; in all the classes of chronic polyarthritis there was a certain tendency towards an absolute lymphocytosis, which was least marked in the cases of arthritis deformans. The author is of the opinion that there are two main groups of polyarthritis, the disease in one group being due to infections, whereas in the other it is the result of constitutional or endocrine disturbances. The first group consists mainly of young persons with anaemia (a red cell count below 4 million per c.mm.), leucocytosis, and fever associated with disturbances in the joints. The second group is mainly composed of persons in or beyond the age of the climacteric: their polyarthritis is never associated with fever, and their leucocyte count is approximately normal.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

329. The Space of Traube.

E. SERGENT (*Ann. de Méd.*, August, 1924, p. 7) denies the practical importance of the limits laid down in 1868 by Traube of the space at the lower part of the left side of the thorax where the percussion note is tympanitic. This area of tympanicity, he states, is dependent on the play of the diaphragm, being concerned with its position, range of movement, and tonicity. The more important conditions leading to enlargement are said to be gaseous distensions of the stomach or colon with attendant compression of the diaphragm, and a gaseous subphrenic abscess. Conditions leading to diminution or obliteration of the space include hepatic enlargements which encroach from within outwards and splenic enlargements which act from without inwards. Pericardial effusions affect the supero-internal part of the space, as also do cases of adhesive pericarditis with pleural adhesions. A basal pneumonia will affect the upper and middle portions of the area, and Paillard is cited as having observed a diminution of resonance of the upper limit in fifty cases of tuberculous pneumonia, the result, in Sergent's opinion, of phrenocostal adhesions. The author insists that it is not safe to estimate the amount of pleural effusion by the level of dullness in Traube's space; other factors to be considered include displacements of the heart, fixation of the diaphragm by adhesions, pulmonary consolidation, and thickening of the pleura; inflammation of the diaphragm eventually induces a degree of paresis, and a consequent alteration of the level of dullness. An encysted pleural effusion at the left base can completely obliterate the resonance of Traube's space. Phrenocostal adhesions may obliterate the space; they are distinguished from general effusion by the absence of the distension of the thoracico-abdominal region, fixation of the lower thorax, and occasional reversed diaphragmatic movement. The tone of the diaphragm, according to the author, is the key to correct interpretation, and he claims to have verified his contentions by radiological examination.

330. Sequels of Encephalitis in Childhood.

JÖRGER (*Schweiz. med. Woch.*, July 24th, 1924, p. 679) gives an account of the results of a questionary about encephalitis in children, addressed to the doctors of Switzerland. Reports were received from thirty doctors concerning 77 patients between the ages of 6 and 32 years. The 5 patients over the age of 20 were still so ill that they required hospital treatment. Most of the patients were between the ages 10 and 17 years, and there were 48 males to 29 females. On the assumption, which is borne out by statistics, that the numbers of males and females contracting encephalitis are approximately equal, it would seem that, so far as late effects are concerned, the male brain is more easily damaged by encephalitis than the female brain. These 77 post-encephalitic cases could be classed in two approximately equal groups which the author describes as "active" and "apathetic." The "active" cases were those in which there was little evidence of gross organic disease, the most prominent changes being concerned with the patient's character. While Parkinsonism, disturbances of respiration, excessive salivation, and paralyses gave comparatively little trouble in this group, difficult problems were raised by the irritability, moral depravity, and general mental instability of the patients. The most prominent characteristics of the "apathetic" group were the general helplessness, paralyses, and Parkinsonism. An extreme example of this group was a patient, aged 22, whose post-encephalitic symptoms had gradually become worse for four or five years. He showed katatonic rigidity without the tremor of Parkinsonism, and when he attempted to write he would stop suddenly in the process and continue after a short interval. The author pleads for the provision of special institutional treatment for these post-encephalitic cases, many of which do not fit well into the existing institutions for diseases of the mind and body.

331. Chlorosis and Tight-lacing.

T. DENEKE (*Deut. med. Woch.*, July 4th, 1924, p. 902) publishes statistics showing how enormously the incidence of chlorosis has declined of late. His statistics deal with the period 1895 onwards, and his material consists of patients treated at a hospital in Hamburg. In 1901 there were about 12,000 patients admitted to this hospital, and among them there were 201 cases of chlorosis. In 1923 there were about 20,000 patients admitted to the same hospital, yet among them were only 3 suffering from chlorosis. A graphic representation of the incidence of chlorosis shows a rise from 1895 to 1901 and a very rapid decline after this year. The author discusses and dismisses the hypothesis that this decline is due to early wholesale treatment with iron, and the hypothesis to which he leans is that woman's emancipation from tight-lacing has rid her of chlorosis, agreeing with Roch and Bickel (BRITISH MEDICAL JOURNAL, May 31st, 1924, Epitome, para. 431). He states that formerly it was the fashion for girls who were inclined to be stout at the age of puberty to lace most conscientiously, hardly discarding their corsets when they went to bed. The frequency with which country girls used to develop chlorosis when they moved into a town could be traced to tight-lacing being enforced more in towns than in the country. The association of fatness with chlorosis was merely an indication that the fatter the girl the more desperately did she lace herself up. The geographical distribution of chlorosis was exactly that of the corset, Persian and Japanese women being blessed (or cursed) with neither. Again, discarding corsets has been known to cure chlorosis without the aid of any other remedy, and the good effect of rest in bed in severe cases may be explained on the same ground. The author anticipates that the fashion of tight-lacing will return some day, and that the correctness of his views will then be proved by the return of chlorosis to its former frequency. Since chlorosis is easy to cure and is a condition on which to build a great therapeutic reputation, the author thinks that the advent of this era may be awaited with equanimity.

332. Venereal Statistics in Germany.

M. GUMPERT (*Dermatol. Woch.*, July 19th, 1924, p. 852) has collected statistics from the female patients attending the dermatological clinic of the Rudolf Virchow Hospitals, Berlin, during the period 1913–23. In these eleven years the total number of female venereal cases was 6,860; the lowest annual total was 448 (1915), and the highest 800 (1923). Gumpert takes three groups of cases: (1) primary syphilis, (2) soft ulcer, (3) condyloma. The primary syphilis curve varies greatly—for example, from 2.5 per cent. in 1913 it rose to 3.2 per cent. in 1914, fell to 1.5 per cent. in 1915, rose to 3.7 per cent. in 1916, to 4.3 per cent. in 1919, and to 10 per cent. in December, 1923. The curves of the other diseases also vary widely—for example, the number of cases of soft ulcer was 10 per cent. of the total in 1914, 11 per cent. in 1919, falling to 3 per cent. in 1922, and rising to 4.8 per cent. in December, 1923. The highest number of cases of condyloma occurred in December, 1922, when they formed 7 per cent. of the total. Gumpert compares these statistics with others from Würzburg and Brussels, but finds no parallelism; he attributes the increase of venereal disease in Germany during the war period to the social conditions, and the subsequent rapid rise of the syphilis curve to "the pressure of adverse economic forces."

Surgery.

333. Long-standing Primary Growth of the Liver.

AFTER a review of recent work on growths of the liver, E. TRENTI (*Il Policlinico*, September 1st, 1924, p. 461) reports the case of a married woman, aged 30, of good family history, who first complained in September, 1921, of sudden severe abdominal pain, unaccompanied by vomiting or cough, but associated with severe nocturnal headache. In November menstruation ceased, and about this time a swelling in the right hypochondrium was noted. When admitted into hospital in March, 1922, the liver was found to be much enlarged; there was no jaundice, and only slight ascites (the fluid was of secretory rather than transudatory type). The woman was much wasted and suffered from occasional attacks of diarrhoea; there was a network of dilated veins on the abdomen; no changes were noted in the urine, and the blood tests showed nothing pathological. The patient remained in hospital eighteen months, and during that time, beyond a steady wasting and abdominal pains, showed no symptoms. In the last six months some swelling of the cervical glands on the left side were noticed. At the autopsy the growth was found to be a primary lympho-angio-endothelioma, made up of round cells in a stroma of dense connective tissue; some cylindromatous cells were present, with central degeneration and lymphangiectasic

groups. Some small secondary nodules were present in the left lung. The fluid in the peritoneum was directly due to secondary growths in the omentum. A photograph of the patient gives a good idea of the size of the abdomen and the marked wasting of the body.

334. Chronic Glanders.

A. REVERDIN and A. GRUMBACH (*Ann. de méd.*, 1924, xv, p. 42) record cases in two brothers who had been engaged in attending horses suffering from chronic glanders. In both cases the disease commenced in the soles in the form of ulceration, followed by osteitis, with elimination of bony fragments, and accompanied by attacks of lymphangitis. The first brother attacked was ill for seven years, but at the time of publication appeared to have been cured for four years. The second brother showed no signs of the disease until four years after the first, though both were probably infected at the same source. In the second brother the disease assumed a more severe course, giving rise to absolute segmental anaesthesia of one of the limbs. All the corresponding metatarsals sloughed off or had to be removed, and finally the limb had to be amputated. The diagnosis of tuberculosis, syphilis, syringomyelia, hypothyroidism, gangrene, ergotism, leprosy, and mycetoma were successively considered, until investigations made after amputation of the limb showed a glanders bacillus somewhat different from the ordinary type, which the authors called a paraglanders bacillus. The mallein and sero-agglutination tests did not yield any results, but the deviation of complement test was strikingly positive in the presence of three different antigens.

335. Carcinoma of the Penis.

D. B. GILLIAM (*Urol. and Cut. Rev.*, July, 1924, p. 390), who reports two cases in men aged 68 and 71, states that carcinoma of the penis forms from 1 to 3 per cent. of all cancers in males. It arises principally from the glans and prepuce, both of which are usually involved when the patient is first seen. As a rule, it is a disease of advanced life, though Freyer has reported a case in a youth aged 17, and Kaufmann states that 6 per cent. of all cases occur in the sixth decade. Warts and chronic balanitis are the commonest causes. Other factors are scars resulting from injuries or left by venereal ulcers, with a long-continued source of irritation, such as a fistula. No fewer than 29 out of 33 cases collected by Kaufmann began as benign warts. Phimosis is a frequent predisposing cause, as is shown by the fact that it was present in 42 out of Demarquay's 59 cases, as well as by the freedom of Jews from cancer of the penis. Trauma, which occurred in one of Gilliam's cases, is an occasional factor. The subjective symptoms at the onset merely consist of slight itching, but as the growth increases in size it tends to interfere with urination and causes painful erections. The progress of the tumour is slow. Extension of the growth may involve the scrotum, testes, prostate, bladder, rectum, and pelvic cavity. The corpora cavernosa are not attacked early, as the tunica albuginea offers an obstruction to their invasion. The condition, when once established, may long remain as a warty tumour of considerable dimensions, but usually ulceration supervenes. The liver is a favourite site for metastases, which may occur early in the disease. The diagnosis is difficult in the early stage without microscopical examination. At the onset, carcinoma, which is hard and deeply situated, must be differentiated from condyloma, which is soft and superficial. The prognosis is grave unless operation is undertaken in the earliest stage. Recurrences are usually observed in the first year, but may develop after an interval of five years. Treatment is operative or palliative, according to the duration and progress of the disease. If the diagnosis is made very early, total excision of the involved area, with cauterization of the wound, may suffice, but when cancer is well developed excision of the organ is required. *X* rays and radium, though in no sense curative, are valuable adjuncts to the treatment, both before and after operation.

336. Insulin in Surgery.

P. MAURIAC (*Rev. de laryngol., d'otol. et de rhinol.*, August 15th, 1924, p. 501) points out that diabetics have been avoided as patients by surgeons on account of the danger associated with active treatment in their case. There are two main dangers in dealing surgically with a diabetic patient. The first is the risk of infection. A slight failure of asepsis which would have no ill effect in a normal patient may be, and usually is, followed by an infection to which the patient reacts very unsatisfactorily, and which may go on to very serious conditions. Similarly an infection may complicate the dry gangrene of diabetes and the virulence of the organism be much increased. Any operative measures must be performed with the most scrupulous aseptic precautions, and must be completed in the shortest possible time. The second danger is that of grave acidosis and coma, which are more likely to occur in the diabetic with emaciation or the obese diabetic with slight acidosis. Long operations, those involving shock, and particularly chloroform anaesthesia, dispose to coma. The author sums up the use of insulin in the treatment of surgical cases and has drawn the following conclusions. Insulin is of the greatest value in those cases in which the operation can be deferred until the insulin treatment has had time to reduce the hyperglycaemia and acidosis, but in cases where the operation must be performed at once the insulin is not able to act until the operative shock has passed off and the anaesthetic been eliminated from the system. In the post-operative stages it assists in the cicatrization of wounds, and allows the patient to ingest an adequate amount of carbohydrate. In cases with acidosis or profuse suppuration it usually has no effect. In all surgical cases the very purest insulin must be used, since impurities tend to diminish the coagulability of the blood.

Therapeutics.

337. Treatment of Nephritis and Oedema with Calcium Salts.

N. M. KEITH, C. W. BARRIER, and MARY WHELAN (*Journ. Amer. Med. Assoc.*, August 30th, 1924, p. 666) review the various theories of the diuretic action of calcium salts, and give details of two cases of oedema so treated. (1) A miner, aged 22, was admitted to the Mayo Clinic complaining of extreme generalized oedema which had commenced nine months previously: his weight had increased 44 lb. Ascites was present and there was much fluid in both pleurae. The heart was moderately enlarged, the systolic blood pressure was 205 mm., and the diastolic 125. Oedema of the optic discs and retinae was present. About 17 oz. of urine were passed daily: it contained a large amount of albumin, hyaline and granular casts, and a few pus cells. For eleven days he was purged and sweated freely, and the weight decreased by 5 lb., though the urine was not increased. During the next seven days he received 4½ drachms of calcium chloride daily; the daily urine excretion rose to 30 oz., but there was no loss of weight. At the end of seven days the abdomen was tapped and 14 pints of fluid removed, thereby reducing the weight by 23 lb. Calcium was discontinued for four days and then given for ten days; during that period the weight was reduced by a further 8 lb. and the daily urine excretion increased to 53 oz., the fluid intake being 20 oz. The patient was put on a "high caloric" diet and the calcium treatment was continued for nine days, during which he lost a further 21 lb. and excreted 77 oz. of urine in the twenty-four hours. When calcium chloride was discontinued the urine became less in amount but remained highly acid. The loss in weight with gain in strength continued slowly in spite of the "high caloric" diet: at the end of sixty-five days he weighed 8½ st., as compared with 14½ st. on admission. Four months after discharge he weighed 11 st.; there was no oedema and he had improved in health and strength. The urine still contained much albumin, numerous casts, and a few red and white corpuscles. The systolic blood pressure had fallen to 140 mm. Hg. (2) In a woman, aged 21, severe generalized oedema developed seven years after diphtheria. Calcium chloride was given up to 2½ drachms daily. Free diuresis occurred, and at the end of treatment all oedema had disappeared, except for slight pitting over the lower ends of the tibiae. The authors add that at the end of diuresis both patients were much below their normal weight and both had normal renal function; the calcium treatment appeared to accelerate greatly the disappearance of the oedema. The authors give the salt in capsules and find that it is well borne. They preferred the chloride to the lactate. They note that ammonium chloride is more easily taken than calcium chloride, and they suggest that the former may perhaps supersede the latter in the treatment of these cases.

338. The Preparations of Iron and Arsenic.

IN the report made by Professor MORAWITZ (Würzburg) for the German General Pharmacological Commission (abstract, *Klinische Wochenschrift*, October 7th, 1924, p. 1886) the author points out that the preparations of iron used in medical practice should be (1) absorbable, (2) they should produce no injurious effects in therapeutic doses, and especially no dyspeptic symptoms. To prevent the formation of astringent iron salts in the stomach, it is advisable that iron should never be given on an empty stomach, and that alkalis should be administered with these drugs. The author divides iron preparations into two groups: (1) those easily decomposed; (2) those from which the iron is separated with greater difficulty. He recommends reduced iron, pills of reduced iron, saccharated carbonate of iron, Blaud's pills, saccharated ferric

oxide, tinctura ferri pomata (prepared with ferrated extract of apples), liquor ferri albuminati, lactate of iron, and pills of lactate of iron, in private practice, and when a rapid effect of iron is desired. He thinks that the numerous haemoglobin preparations need not be considered amongst the active iron preparations, though they may be of service independently of the iron they contain. Arsenic should be given by mouth in cachexia, nervous affections, lichen, psoriasis, etc., but by injection in parasitic diseases. When a powerful action of arsenic is required, and dyspeptic symptoms are not feared, the form of the "Asiatic" pill, containing arsenious anhydride, is recommended. Arsacetin (sodium acetyl arsanilicum) is the preparation especially recommended by the author in pernicious anaemia, leukaemia, and lymphadenoma. Atoxyl has produced injurious effects. Salvarsan preparations may, he thinks, be of service, in addition to their effects in syphilis, in recent cases of gangrene of the lungs, in alveolar pyorrhoea, in Vincent's angina, and periarteritis nodosa; they are very useful in recurrent fever and malaria (except in the malignant form) as an aid to the quinine treatment. Neosalvarsan and silver-salvarsan are the preparations recommended.

339. Treatment of Chronic Epidemic Encephalitis.

M. ROCH and S. KATZENELBOGEN (*Schweiz. med. Woch.*, September 11th, 1924, p. 834) record five cases of chronic epidemic encephalitis treated by intraspinal injections of casein. A 10 per cent. solution was used, of which 1/2 c.cm. (0.05 gram of casein) was added to 10 c.cm. of normal saline. The mixture, still further diluted by part of the cerebro-spinal fluid withdrawn by lumbar puncture, was slowly injected into the spinal canal. The injection produced a meningeal reaction, which might be severe but was always transient, in the form of fever, headache, nuchal rigidity, and Kernig's sign, lasting from twenty-four to forty-eight hours. The intensity of the reaction, which was of the nature of an aseptic meningitis, depended as much (or even more) on the susceptibility of the individual as on the dose of the casein. It is always advisable to start with a small dose, such as 1/2 mg., which may be increased in subsequent injections if the reaction produced is too slight. All the five cases, of which four were kept under observation more than five months, derived benefit from the treatment. Unlike Netter and Guillain, the authors are of opinion that the meningeal reaction caused by the intraspinal injection is beneficial, and consider that a certain proportion of the good results obtained by the vaccine virus employed by Marie and Poincloux in the treatment of epidemic encephalitis is due to this reaction.

Ophthalmology.

340. Diagnosis of Vertical Deviations of the Eyes.

R. O'CONNOR (*Brit. Journ. of Ophthalmol.*, October, 1924, p. 449) emphasizes the importance of prolonged uni-ocular occlusion as a means for manifesting the full error of heterophoria in any given case. He states that often the ordinary tests for heterophoria not only reveal no error, but may actually give wrong information. He instances a case of apparent esophoria as shown by the ordinary tests, which, after prolonged occlusion, turned out to be one of right hyperphoria. In this case the esophoria was the resultant of the strain upon the intraocular muscles produced by the attempt to counteract the right hyperphoria. When the real lesion has been revealed by monocular occlusion great relief will be obtained by the use of prisms if the lesion is not too great. Why prisms have so often failed to give relief in the past is, according to O'Connor, because the full lesion was not manifested. For very high degrees he advises advancement of the weaker muscle.

341. A New Theory of Accommodation.

L. JOHNSON (*Arch. of Ophthalmol.*, September, 1924, p. 426) propounds a new theory of accommodation. The usually accepted theory, that of Helmholtz, supposes that the ciliary muscle, by contracting, pulls forward the ciliary processes, and, by so doing, relaxes the suspensory ligament of the lens, which is attached to the ciliary processes. The suspensory ligament being relaxed, the resilient lens is allowed to expand and to become more convex, and so to acquire a greater refractive power. This explanation gives no place in the mechanism of accommodation to the circular muscle—the fibres of Müller—which surround the margin of the lens, and the author suggests the following theory. The two ciliary muscles (the radiating and circular muscles) both contract in the process of accommodation, and, by their combined action, drag forward the choroid and ciliary processes, the latter, chiefly by the action of the circular muscle, being squeezed into the circumlental space, thereby compressing the fluid in it. The compressed fluid, in its turn, will press upon the capsule and equator of the lens, causing the surfaces of the lens to bulge. The posterior surface cannot bulge into the vitreous, which is incompressible, and the increase of pressure is relieved by some of the aqueous fluid flowing into the spaces and clefts between the base of the iris and the cornea—the spaces of Fontana.

342. Trichinosis affecting the Eyes and Frontal Sinuses.

THOMAS and WARD COOPER (*Amer. Journ. of Ophthalmol.*, July, 1924, p. 511) describe a case of trichinosis in which the predominant symptoms were referable to the eyes and frontal sinuses. The patient came for advice on account of oedema of the eyelids and pain in the frontal region. He had also suffered from pains in the joints and muscles and from feverish attacks. Much oedema of the lids was found and marked chemosis of the ocular and bulbar conjunctiva; in other respects the eyes were normal. The blood examination revealed a condition of eosinophilia amounting to 30 per cent. This suggested a parasitical cause for the condition, and a history of having eaten corned pork a month previously was obtained. A piece of gastrocnemius muscle was removed, and numerous encysted trichinae were found in it. The patient made a slow recovery under symptomatic treatment.

Obstetrics and Gynaecology.

343. Fixation of Ovary in the Uterus after Salpingectomy.

T. TUFFIER (*Surg., Gynecol., and Obstet.*, October, 1924, p. 401) gives an account of the operation of transposition of the ovary with its vascular pedicle into the uterus after salpingectomy, which he has performed on twenty-three occasions, in order to preserve menstruation and the possibility of pregnancy. The results were excellent in twenty-one cases, but in two cases late hysterectomy was necessitated, on one occasion for intestinal obstruction not related to the ovarian transposition. These two patients completely recovered, and Tuffier adds that the accidents were due to imperfections inseparable from the evolution of a new technique. The operation includes the division of the broad ligaments close to the tube, the separation of the ovary from all surface adhesions, and its transposition into the previously dilated uterus; the greater part of the uterine wound is subsequently closed by three or four interrupted catgut sutures, and a second series of Lembert serous sutures close together. The peritoneum of the ovary pedicle, which occupies the lower portion of the wound, is accurately sutured to the uterine peritoneum without any compression resulting. Tuffier remarks that menstrual periods reappear after two to six months.

344. Pathogenesis and Treatment of Uterine Fibroids.

P. PETIT-DUTAILLIS (*La Gynécologie*, June, 1924, p. 321) discusses the theory that a uterine fibroid results from the failure of the uterus to function normally. It occurs in women who either have not borne children or who have ceased to bear them while still sexually active. He suggests that the fibroid is a manifestation—in a uterus which has menstruated too long without becoming pregnant—of an often repeated intoxication which menstruation has been unable to dispel. He argues that menstruation is not to be considered as the normal function of the ovary. It occurs independently of the existence or the maturity of the corpus luteum (according to the researches of Schickele), and is a mechanism on the part of the uterus to get rid of reserves which, in the absence of fertilization, are not needed. The normal event for the woman is pregnancy, and menstruation is an abnormal phenomenon indicating a failure in function, not only of her genital organs, but of her whole body. The latter is regulated with a view to preserving the species, and only when she is pregnant can a woman be said to be in perfect health. If menstruation, then, is a substitute for a normal function, he continues, it is not surprising that the continued repetition of this palliative results in trophic disturbances to those organs most intimately connected with reproduction. When hypertrophy of the uterus is frustrated by the absence of fertilization, this potential activity is changed by endocrine influence into degeneration. Treatment depends on whether local complications are present or absent. In the first case myomyectomy is recommended in women under 40 for subperitoneal fibroids single or few in number; according to Goullioud, this treatment results in fertility in at least 25 per cent. of cases. Special care must be given to the sutures, although rupture of the uterus is exceptional. Should pregnancy occur the possible existence

of further tumours must be remembered and preparations made in case operative treatment should be necessary. Partial hysterectomy is suggested in cases of multiple fibroids localized in one area, the advantage being that it preserves more of the normal genital function. In one kind of operation the fundus is removed with or without the appendages; in the other—unilateral hysterectomy—a unicornate uterus is left behind. Myomectomy by the vaginal route is the best operation for accessible fibroids. It is usually effective, since such fibroids are generally single. Before the era of radiotherapy castration was employed in cases of extreme anaemia. To be successful it must be complete, the ovaries being entirely removed, and there must be no inflammatory or degenerative changes in the fibroid. Operative treatment has a mortality of 5 per cent., and therefore, according to the author, as a safer procedure, radiotherapy is to be preferred, though it abolishes the possibility of pregnancy. At least twelve *x*-ray exposures are required; they may do much harm, but they penetrate where the fibroids have spread out into the parametrium and are out of reach of radium. Radium is best administered in the uterus after preliminary dilatation of the cervix, in which procedure, however, care must be taken not to damage the uterine mucosa. A small dose left in for four or five days is more efficacious than a larger dose over a shorter period. In the second case, where there are local complications, operative treatment is imperative if there is degenerative change or infection. Pressure symptoms, though seldom so urgent as to call for immediate hysterectomy, will, however, often turn the balance in favour of operation. The symptoms may be relieved by a mild dose of radium. Polypoid submucous fibroids may be removed through the vagina, or they may be treated by radium. The latter treatment, however, is often followed by temporary flooding, which may last as long as six weeks. The author does not suggest that radium will cure all fibroids. A certain number may receive palliative treatment, such as thermal waters; for about 25 per cent. operation is indicated; and for the remainder radium is the treatment of choice. He has treated forty-two patients thus; in one the symptoms persisted, four have been lost sight of, and the remainder were cured.

345. Premature Rupture of Foetal Membranes.

MILDRED VAN CLEVE (*Journ. Amer. Med. Assoc.*, August 23rd, 1924, p. 612) reports a case of rupture of the foetal membranes about the twenty-fifth week of pregnancy, followed by the birth of a living healthy, though premature, infant eight weeks later. There was no evidence of amniotic adhesions and no infection of cord, umbilicus, or endometrium. The pregnancy began within a few weeks after an abortion and was complicated by a slight premature separation of the placenta. The author adds that such a rupture so long before delivery is very rare, and she refers to the few reported cases.

Pathology.

346. Susceptibility to Infection of Children and Adults.

F. NEUFELD (*Zeit. f. Hyg. und Infekt.*, July 15th, 1924, p. 471) considers the difference in susceptibility to infection which exists between children and adults. To such diseases as epidemic meningitis and poliomyelitis, diphtheria, tuberculosis, and the various respiratory infections caused by pneumococci and streptococci, children, particularly infants, are considerably more susceptible than adults. On the other hand, in the case of such diseases as typhus fever, enteric, and small-pox it is the adult population which shows the greater susceptibility. On what do these differences rest? It appears fairly certain to Neufeld that they are not to be explained entirely on the ground of acquired immunity: children, for example, who are brought for the first time into contact with tuberculosis have a higher resistance than have sucklings; moreover, with such a disease as poliomyelitis, infection is not sufficiently widespread to produce any extensive immunization of the population. The difference, then, appears to rest on some peculiarity of the natural resistance of the younger members of the community. Some years ago Behring maintained that the mucosa lining the digestive tract was more permeable to proteins and to micro-organisms in children than in adults; these observations, which might explain the difference, have not, however, received any definite confirmation. There has recently, nevertheless, accumulated a certain amount of evidence to suggest that, in passing through the digestive mucosa, micro-organisms receive in adults some injury which they do not receive in children. To test this more fully, the author made some experiments on mice. He had found previously that it was quite impossible to infect adult mice with trypanosomes by feeding. He now fed young mice, 11 to 18 days old, with blood containing a virulent strain of the nganu trypanosome, and found that three of the animals died of acute infection with these protozoa. Arguing from this and from other experiments, he comes to the conclusion that in young individuals the resisting powers of the skin, the mucous membranes, and the lymphatics draining these structures, are less fully developed than in the adult. In the latter, however, the formation of humoral antibodies is not so rapid as in the former. On the interplay and mixture of these two resisting mechanisms he explains the difference in susceptibility to infection of the young and the old.

347. Relationship of the Suprarenal Gland and the Thymus.

H. L. JAFFE (*Journ. Exp. Med.*, September, 1924, p. 325) presents experimental evidence showing that the thymus gland of the rat enlarges rapidly in those animals which survive double suprarenalectomy in good condition for from three to five weeks. The thymus enlarges even though the animal loses some weight after the operation. This secondary hyperplasia is more marked in the female and is independent of pregnancy. The interrelation between the gonads and the thymus is classical, castration before puberty delaying thymus involution for a long time. The close association between the gonads and the suprarenals is evident in the enlargement of the latter in pregnancy, ovulation, and castration, and the hypertrophy of the ovaries after suprarenalectomy. The author notes that the suprarenal glands are much larger in the female than in the male, and suggests that the sex difference in the secondary thymus hyperplasia is due to the suprarenal glands standing in closer relation to the sex organs of the females than in the male, and the consequent greater disturbances between gonads, suprarenals, and thymus following on double suprarenalectomy. Enlargement of the thymus is a feature of the autopsy in cases of Addison's disease, status lymphaticus, and Graves's disease. The author believes that the persistence of the thymus which occurs in status lymphaticus, and the regeneration which occurs in Addison's and Graves's diseases, are brought about by the same disturbances in glandular interrelations which bring about regeneration of the thymus in the experimental animal after suprarenalectomy.

348. The Vitamin Content of Bananas.

EVA SOPP (*Norsk Mag. f. Laegevidenskaben*, September, 1924, p. 732) notes that, while most authorities agree as to the presence of B and C vitamins in bananas, there are divergences of opinions as to the presence of A vitamins. She has therefore conducted an experiment on young rats fed on a basal A vitamin-free diet. The 25 rats used in this experiment were grouped in three classes, and when they had begun to show signs of A vitamin deficiency, and most of them had developed advanced xerophthalmia, they were given different quantities of banana. The rats in the first class were given as much banana as they could eat, in addition to the basal A vitamin-free diet. The rats in the second class were given only 1 gram of banana daily. The rats in the third class were given 2 grams of banana daily. It was anticipated that, even if there were A vitamins in the banana, only 1 gram a day would be insufficient to cure the xerophthalmia and generally to counteract the effects of the previous A vitamin-free diet. But it was found that the rats in the second class did practically as well as the rats given a larger banana ration. They did not improve much during the first fortnight of the banana feeding, but afterwards they recovered rapidly, and when the experiment was completed after ten to twelve weeks the xerophthalmia had in most cases vanished. The daily dose of banana for the rats in the second class being 1 gram for every 50 grams of bodyweight, the author calculates that a 3-year-old child weighing between 26 and 30 lb. would require four or five bananas a day, but she adds that a much smaller quantity would probably be sufficient to provide the necessary quantity of A vitamins. Her experiments lead her to suggest that the banana is an excellent food for children, not merely because of its pleasant taste, digestibility, high content of sugar and starch (19 to 20 per cent.), of protein (4 to 5 per cent.), and of fat (0.5 to 1 per cent.), but also because of its high vitamin content.

349. Balantidiasis.

E. DE SOUZA CAMPOS (*C. R. Soc. de Biologie*, May 23rd, 1924, p. 1341) records a fatal case of dysentery in a child in whose stools *Balantidium coli* was found. The necropsy, which was performed seven hours after death, showed minute ulcers of the caecum, appendix, colon, and rectum, and more or less extensive areas of superficial necrosis. Histological examination showed that *Balantidium coli* had penetrated all the coats of the large intestine and had also invaded the lymphatic glands and blood vessels, in which it had given rise to an inflammatory reaction, especially of the lymph and plasma cells. The superficial necrosis was probably due to a secondary infection.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

350. Total Heart-block due to Gumma.

G. J. VAN DEN BOVENKAMP (*Nederl. Tijdschr. v. Geneesk.*, September 20th, 1924, p. 1502) states that total heart-block is the condition in which no impulses pass from the sinus to the ventricle. The latter then contracts regularly by itself with a frequency of about thirty beats a minute, while the sinus contracts with much greater frequency. The cause of the condition is to be found either in arterio-sclerosis of the vessels supplying the bundle of His or in a gumma affecting the bundle. It is obvious that a cure is impossible in arterio-sclerosis, whereas in a case of gumma recovery may take place. Van Bovenkamp records a case in a man, aged 60, who presented a systolic murmur at the apex, a pulse of 38, a systolic blood pressure of 225, and a diastolic pressure of 100 mm. Hg. The patient complained of shortness of breath, was pale, and slightly cyanosed. Signs of arterio-sclerosis were present in the peripheral vessels, as was to be expected in a man of his age. Although there was no history or evidence of syphilis, specific treatment by intramuscular injections of mercury perchloride and potassium iodide internally was instituted, with the result that after a period of partial heart-block the pulse rose to 90, and the blood pressure fell to 170 systolic and 95 diastolic, and all the other symptoms disappeared. It is not likely that the gumma was situated in the bundle of His, as it could not have disappeared without leaving a trace of its presence, but it is more probable that its close juxtaposition caused pressure on the bundle or interfered with its blood supply.

351. Asthma and other Anaphylactic Idiosyncrasies.

K. BAAGÖE (*Ugeskrift for Laeger*, July 31st, 1924, p. 577) publishes investigations which suggest that several, apparently independent, idiosyncrasies may depend on a common factor. In support of this thesis he refers to the case of a 9-year-old boy who suffered from attacks of asthma, and who also showed a marked idiosyncrasy to eggs. As soon as he ate a particle of egg he suffered from nausea and vomiting, but on these occasions he never suffered from an attack of asthma. To overcome his idiosyncrasy to eggs he was given egg powder in gelatin capsules, the amount being gradually increased from a few milligrams to 5 grams. All went well till one day when, a capsule of egg powder having been broken, he inhaled a little in the act of swallowing the capsule. A few minutes later his lips and mouth became very much swollen, he developed a violent coryza, his voice became hoarse and piping, and an attack of asthma set in. The author concludes that the boy's idiosyncrasy to eggs was not due to their absorption by the stomach, but to nausea caused by oedema of the fauces provoked by eggs in the act of swallowing. The sequence of events—first oedema of the mouth with a coryza, then hoarseness, and finally an attack of asthma—suggested that the whole attack, including the asthma, was due to urticaria of the respiratory tract rapidly spreading from the mouth and nose to the bronchioles.

352. Incidence of Tuberculosis among Nurses and Ward Maids.

O. SCHEEL (*Tidsskrift f. d. Norske Laegeforening*, August 1st, 1924, p. 709) has investigated the incidence of tuberculous diseases among the 2,913 nurses and 1,411 ward maids employed in the communal hospitals of Christiania in the six-year period 1918 to 1923. There were 63 cases among the nurses (2.16 per cent.) and 23 cases among the ward maids (1.63 per cent.). The pleurisies alone were almost as numerous as all the other tuberculous diseases put together, and it was significant that of the 27 cases of pleurisy among the nurses as many as 15 occurred during the first year of service. There were 8 cases in the second year, 3 in the third year, 1 in the fourth year, and none in the later years of hospital service. The author suggests that these figures may indicate a state of affairs requiring reform. A young probationer who may have come from the country and be still negative to von Pirquet's test is given daily hard work of body and mind for nine hours or more, and is exposed to infection if stationed in a tuberculosis ward. The author's remedy is that every probationer should be tested with the von Pirquet tuberculin reaction, and if not reacting to it she should be kept out of contact with tuberculous patients, at any rate for the first year.

353. The Contagiousness of Lethargic Encephalitis.

G. STIEFLER (*Wien. klin. Woch.*, August 28th, 1924, p. 850) has seen twelve examples of the transmission of the contagion of lethargic encephalitis. In six infection was probably caused by direct contact, including three cases in which there was a familial or house infection. In five cases there was probably indirect contagion through a healthy third person, and in one case it was uncertain whether the contagion occurred directly or indirectly. The incubation period in the six cases of direct contagion ranged between six and twenty-one days. Of the infecting cases eight were in the acute stage and four were in the late stage, including three in which an acute exacerbation occurred. Those who deny the possibility of transmission of lethargic encephalitis may be reminded of the epidemiology of acute poliomyelitis, which for a long time was not regarded as contagious until it was at last proved to be so, mainly owing to the investigations of Ivar Wickman. In view of the contagiousness of lethargic encephalitis isolation should be carried out as early as possible, both in acute cases and in chronic cases during a relapse.

Surgery.

354. Acute Osteomyelitis of the Ilium in Childhood.

P. BUONSANTI (*Arch. Ital. di Chirurg.*, September, 1924, p. 1) publishes four cases of this rare condition—how rare is shown by the fact that, out of 170 cases of osteomyelitis seen by him in the last fourteen years, these four are the only iliac cases he has encountered. Full details with skiagrams are given of three of the cases, and a bibliography of some twenty references is appended. As in other cases of osteomyelitis, the *Staphylococcus aureus* is usually the causative agent, and in half the author's cases there was a history of previous trauma. Diagnosis is very difficult owing to the deep-seated position of the lesion, and radiography, apart from showing a definite periosteal reaction, does not help much in distinguishing it from new growth. Owing to the ease with which metastatic visceral lesions are set up, the disease is of marked gravity and the mortality high. Early treatment of the diseased bone is essential, and when the sequestrum is immersed in pus it should be removed. In the author's cases the osteomyelitis started primarily in the ilium. Grouping the statistics of 1,469 cases of osteomyelitis, only 23 were localized in the ilium. Osteomyelitis may be called a "furunculosis of bone," since the staphylococcus plays such a prominent part in its causation. In the fourth case the boy suffered from cutaneous furunculosis which might have been the starting point of his osteomyelitis. The internal surface of the ilium is more vulnerable to osteomyelitis than the external; the pelvic organs do not seem to be affected as a rule in osteomyelitis of the ilium and in metastases. He concludes that vaccine therapy has not given particularly good results in these severe cases, but should be tried.

355. Tumours of the Carotid Gland.

A. BIRMAN (*Deut. Zeit. f. Chir.*, July, 1924, p. 384) has collected 95 cases of tumour of the carotid gland, including one of his own, and places them in two groups. In the first group the tumours are benign in character, and more or less closely resemble the normal carotid gland in structure. It is uncertain, however, whether these growths are merely hyperplasia or examples of true blastoma, and for this reason "struma" appears to be the most suitable term to apply to them. The second group consists of malignant growths which invade the surrounding tissues. Regional metastases are rare, and distant metastases have hitherto not been observed. Severe symptoms are exceptional, and in most cases the patient seeks advice on cosmetic grounds. The diagnosis is difficult, and can hardly ever be made except by exclusion. It is important, however, to remember the possibility of these tumours, owing to the prognosis and the indications for operation. The treatment is purely surgical. Operation, however, should only be undertaken when the tumour is small, or the pain is very severe and there is a suspicion of malignancy. Only about 18 per cent. of the cases operated on recover, this unfavourable result being due to the following circumstances: The common, internal, or all three carotids are resected in 70 per cent. of all cases, of which a quarter develop hemiplegia, with a mortality of 9 per cent. In 20 per cent. the vagus is resected, half the cases dying of deglutition bronchopneumonia. The other deaths are due to

air embolism, sepsis following operation, haemorrhage from slipping of a ligature, and intercurrent disease. Apart from hemiplegia and shock, the most frequent sequelae of the operation are narrowing of the pupils, paralysis of the vocal cords, hoarseness, and difficulty in swallowing. Birman's patient was a man, aged 54, who had noticed a swelling on the right side of the neck for five years without its having caused any symptoms. It was only within the last few weeks before consulting Birman that there had been a rapid increase in its size, with a dragging sensation on the right side of the neck. The patient had never been hoarse, and only wished to have the tumour removed for cosmetic reasons. The growth, which was about the size of a hen's egg, was removed after ligature of the right internal carotid. Two days later left hemiplegia developed. When seen three months later the patient was able to walk without support, but had only a little movement in the left arm and complained of occasional epileptiform attacks. Histological examination of the tumour showed that it was a hyperplasia of the carotid gland.

353. Snap-finger and Polyarthritis.

J. HELWEG (*Ugeskrift f. Laeger*, July 17th, 1924, p. 546) notes that, while in the healthy snap-finger seems to occur only in connexion with prolonged trauma inflicted by such acts as gripping the handle-bars of a motor bicycle too firmly, this condition may arise almost spontaneously in the subjects of polyarthritis, whose tissues appear to be peculiarly vulnerable in this respect. Among 413 cases of polyarthritis treated at the author's hospital in the period 1918–23, there were 21 with a record of snap-finger. Since he began to study this condition intensively, the author has found it often in the subjects of polyarthritis, 11 out of 23 cases seen since January 1st, 1924, showing one or more snap-fingers. In many cases of polyarthritis it was the snap-finger, rather than the articular changes in the fingers, which caused pain, interfered with the usefulness of the hands, and was responsible for the swelling. As in healthy persons, the subjects of polyarthritis develop snap-finger most readily when prolonged pressure on the palm of the hand is produced by such acts as resting heavily on a stick. If this condition is neglected, a stage may be reached when the finger ceases to snap because the fibrous infiltration of the tendon and its sheath has become so great that movements of one in relation to the other are no longer possible. This stage is not reached simultaneously by all the snapping fingers, some continuing to snap after others have become silent. Early in the disease the most troublesome symptom is the pain felt at rest as well as on movement; later, the purely mechanical limitation of the finger movements gives more trouble. The author insists on the importance of prophylaxis—that is, avoiding acts calculated to injure the hands of the subjects of polyarthritis. Such prophylaxis may also prevent the further development of the disease, but, as one of the author's cases shows, transferring a walking-stick from one hand to the other, because the fingers of the first hand have begun to snap, may merely mean provoking the disease in the other hand. Massage is usually effective in banishing pain and tenderness, even in chronic cases in which great infiltration of the tissues has occurred. This treatment also increases the range of movement of the fingers. The author refers to operative treatment in no flattering terms.

Therapeutics.

357. Metallic Mercury Suspensions in Treatment.

H. N. COLE, J. G. HUTTON, J. RAUSCHKOLB, and T. SOLLMANN (*Journ. Amer. Med. Assoc.*, August 23rd, 1924, p. 593) discuss in considerable detail the therapeutic results of the intravenous and intramuscular injections of metallic mercury suspensions, with especial reference to the use of "mercodel," which is a fine trituration of mercury with glucose in the ratio of about one to five. They found that intravenous injections of this suspension produced a rapid disappearance of spirochaetes from the lesions of primary syphilis, prompt clearing up of the secondary lesions, and improvement in the spinal fluid. These results were observable within a day or two of the first injection, but relapses occurred unless the treatment was continued, more than six injections being required for satisfactory results. The amount of mercury introduced during a course of treatment was much greater than in other methods. No adverse effects on the kidneys and intestines were provoked, but there seemed to be some tendency to stomatitis, which might pass into severe and even fatal forms. The authors found that the repeated injections tended to set up serious inflammatory reactions in the veins. Intramuscular injections presented similar dangers and uncertainties, and were markedly irritant. They therefore consider the risks too great to justify at present the therapeutic use of this suspension. They give details of the treatment of 23 cases to illustrate their contentions.

358. Treatment of Epidemic Encephalitis with Trypaflavine.

BUSS and PELTZER (*Deut. med. Woch.*, July 25th, 1924, p. 1014) confirm an earlier publication by Buss in which he showed that intravenous injections of trypaflavine were remarkably effective in the early stage of epidemic encephalitis. The authors' present paper includes a detailed record of sixteen cases, many of them severe, in which trypaflavine was given with more or less good results even when, as happened in some cases, the disease had lasted for some time before the treatment was instituted. The usual dose of trypaflavine was from 5 to 15 grams injected every day; in one case, which terminated in recovery, as many as forty-four injections were given over a period of three months, a total of 400 c.cm. of the 0.5 per cent. solution of the drug being given in this period. This was the only case in which the injections seemed to provoke bladder symptoms. Though in none of the published cases was the daily dose of trypaflavine more than 20 grams, the authors recommend doses of 20 to 60 grams a day by intravenous injection. They suggest that timid dosage comparatively late in the disease may well be responsible for the lack of faith in the efficacy of trypaflavine in this disease.

359. The Action of Digitalis.

H. VAQUEZ (*Arch. Mal. du Coeur, des Vaisseaux et du Sang*, October, 1924, p. 609) reviews modern theories of the action of digitalis, the indications for its use, and the method of prescribing it. He remarks that the collection of digitalis leaves is particularly unsatisfactory; many specimens of the drug are almost inert owing to improper methods of collecting and drying the leaves, which contain oxydases capable of producing profound chemical changes in the glucosides should fermentation occur. He finds "digitaline cristalisée" (Nativelle, 1868) still the most reliable preparation. Vaquez advances several objections to standardization of the infusion and tincture by animal experiment, and asserts that advances in our knowledge of the action of digitalis have been due to clinical observation rather than to physiology. He maintains that Lauder Brunton's description of the phases of the action of large doses of digitalis still holds good, except that he was in error in stating that the drug is diuretic even in health. Vaquez points out that digitalis acts directly on the myocardium, and when this is damaged digitalis may interfere with the transmission of the impulse from auricle to ventricle, causing pulsus bigeminus and extra-systoles by increasing the muscular irritability. When this is very marked it may indicate disease of the myocardium or of the bundle of His and necessitate a grave prognosis. Vaquez objects to the term "cardiac tonic" as applied to digitalis, and observes that Harris has described three phases in its action: (1) Diastole and systole are both prolonged, without augmentation of systolic contraction or of the volume of blood. The heart is "slowed," probably as a result of action on the sinus; this is of small value in relieving the circulation. (2) Systole becomes slower and more forcible, the quantity of blood poured into the aorta is increased, and the intraventricular pressure rises. At that moment disturbance of conduction may be observed. (3) The heart beats are accelerated, the quantity of blood is diminished, and intraventricular pressure falls; this is the toxic phase. Study of electro-cardiograms has thrown light on the action of digitalis, but the ultimate proof is clinical. The promiscuous prescription of digitalis for every form of cardiac arrhythmia, whether organic or purely functional, is unjustifiable. Vaquez insists that digitalis is of little value in mitral regurgitation until cardiac dilatation is so advanced that there is definite oedema. Similarly in aortic regurgitation digitalis is not indicated until arrhythmia occurs with symptoms of secondary dilatation. He holds that the fear that digitalis will raise the blood pressure in these cases is illusory, and may be very prejudicial to the patient's welfare. The drug should not be withheld in the belief that it has produced or increased bigeminism or arrhythmia; on the contrary, as the drug acts it is usual for the rhythm to be restored. Permanent bradycardia definitely contraindicates digitalis. Vaquez considers that the use of small doses of digitalis is forbidden by logic and experience, and that the dangers of its cumulative effect have been exaggerated. He cites the case of a man suffering from high blood pressure with cardio-renal derangement and generalized oedema who had had 5 drops of digitaline solution daily for a long period without improvement. The drug was withheld for ten days; the patient then received 40 drops in one dose, followed by 10 drops on each of the next two days. After forty-eight hours there was abundant diuresis; in a week he passed 740 ounces of urine and the oedema disappeared.

Radiology and Electrology.

360. Radium in Carcinoma of the Uterus.

H. SCHMITZ (*Urol. and Cutan. Rev.*, August, 1924, p. 447), from a study of 418 consecutive cases of carcinoma of the cervix treated by radium, has come to the following conclusions: (1) Patients with carcinoma free from necrosis and of limited extent may be safely given the total radiation dose within the shortest time practicable. (2) Patients with extensive and necrosing carcinoma should be treated by fractional doses at definite intervals. At the first course a dose should be applied which will arrest the haemorrhage and the necrosis and temporarily check the growth of the carcinoma. As soon as the patient has passed the period of radium intoxication the balance of the radiation dose may be applied. The danger of radium intoxication is thus reduced. (3) Patients with extensive carcinoma almost filling the small pelvis or with large necrosing areas and advanced cachexia should not be subjected to a full course of radium treatment, and one should be content to arrest the bleeding by a small dose of filtered radium. (4) Recurrences following the application of a correctly measured and full radium dose should not receive further radium treatment, as the tissues are now refractory to the rays and have lost their recuperative powers. In such cases ulceration and necrosis of the normal tissues often follow the reapplication of radium.

361. Radium Treatment of Cataract.

MCKEE and SWETT (*Amer. Journ. Ophthalmol.*, August, 1924, p. 587) report upon a series of 25 cases of incipient cataract which were treated by radium. A dose of 10 mg. hours was applied twice a week for eight treatments, the same dosage was then applied once a week for eight treatments, and subsequently every two weeks. Their conclusions are that in no case was any definite permanent improvement obtained. Some of the patients said they were better shortly after the treatment, but such improvement probably depended upon psychological causes, as no alteration such as absorption of the opacities was seen. The application of the radium caused no apparent injury to any of the structures of the eye apart from an occasional slight erythema of the lids.

362. Diagnosis of Biliary Calculi.

P. LIGNIAC and A. DEVOIS (*Journ. de Radiol. et d'Electrol.*, July, 1924, p. 307) state that French radiologists were surprised at the American statistics which showed 80 per cent. of successes in skiagraphy of biliary calculi. The authors consider that the success of American radiologists is almost entirely due to the fact that while European patients are unwilling to allow more than fifteen to thirty minutes for radiographic examination, American patients do not hesitate to go into hospital for four to eight days for diagnostic purposes. During this period the radiologist has ample opportunity to examine the patient every day, as often as he likes, and in any position that he deems necessary; consequently as many as twenty to forty skiagrams may be taken. Since the adoption of American methods Ligniac and Devois are satisfied that without special preparation the multiplication of films will enable the great majority of biliary calculi to be demonstrated. The authors give skiagrams of three typical cases in married women in whom the suspected calculi were demonstrated only after a series of skiagrams had been taken. In their third case a deformity of the duodenum, diagnosed as due to periduodenitis, was shown to result from pressure by a large gall stone which had been invisible previously. They conclude that it is not only useful but also essential to take as many films and screenings as may be required for diagnosis.

363. X-ray Diagnosis of Acute Osteomyelitis.

F. W. O'BRIEN (*Boston Med. and Surg. Journ.*, September 11th, 1924, p. 484) states that an unqualified diagnosis of this disease by *x* rays is fallacious. The changes taking place are chiefly microscopic, and "a skiagram is a photographic visualization of the varying densities of a substance or substances exposed to *x* rays." The progress of the disease is too rapid for the production of gross changes in the density of the bone. During the past year O'Brien has seen an increasing number of cases of acute osteomyelitis in which he had to report, "No *x*-ray evidence of bony changes recognized." This appeared to act as a deterrent to the surgeon; he therefore restates the cardinal signs of acute osteomyelitis, and urges that the diagnosis should be made on the general and local clinical symptoms, especially a differential blood count, since marked leucocytosis occurs usually within six or eight hours from the onset of pain. He adds that *x* rays are of the greatest value in atypical bone lesions near joints simulating acute osteomyelitis, and cites the case of a 15-year-old boy with a history of a fall on the knee one week before, followed by pain in the thigh. A skiagram showed such gross bony changes that it was evidently either a chronic osteomyelitis or a malignant bone tumour: it proved to be a sarcoma. The author quotes Starr's observation that "*x* rays are of no assistance in early diagnosis," but qualifies this as follows: "With the clinical signs present and an *x*-ray examination that shows no positive bone changes, the diagnosis is clinched and surgery is indicated: to wait for bone changes is folly."

Obstetrics and Gynaecology.

364. Dysmenorrhoea and Bicornuate Uterus.

C. G. N. NOË (*Nederl. Tijdschr. v. Geneesk.*, September 27th, 1924, p. 1606), who records an illustrative case, states that uterus bicornis is due to a disturbance of development in the second month of intrauterine life, during which period the Müllerian ducts are hollow. The cause of the dysmenorrhoea frequently associated with a bicornuate uterus is not always to be found in the rudimentary condition, as is generally supposed. The uterus may be removed under the belief that the symptoms may disappear, but the patient returns some time after with the same symptoms as before. Noë considers that the cause of dysmenorrhoea associated with bicornuate uterus, when the uterine mucosa is histologically abnormal, is both psychical and ovarian, and that when the mucosa is normal and there is an absence of infantilism the cause is entirely psychical. In both cases the malformation has no causal significance, unless damming back of the uterine secretion occurs in the rudimentary cornu, in which case there is a mechanical cause for the condition. Not infrequently a bicornuate uterus is associated with other abnormalities, which may lead to a wrong diagnosis. Thus a pelvic kidney may be mistaken for an ovarian tumour. If the bicornate uterus is not diagnosed, the dysmenorrhoea may be attributed to a tumour, and the true condition is not discovered until laparotomy. Noë's patient was a nullipara, aged 24, who had always had violent pain during menstruation, which occurred every four weeks and lasted about eight days, during which she lost much blood. The first period had occurred at the age of 14. Several practitioners, including a specialist, had made a diagnosis of bilateral ovarian tumours. On examination by Noë a diagnosis was made of left pelvic kidney, right movable kidney, and a bicornuate uterus, with a rudimentary left cornu. Operation, which was carried out under sacral anaesthesia, confirmed this diagnosis. The rudimentary cornu was removed. As diuresis was not affected, nephropexis was not considered necessary.

365. The Blood in Pregnancy Toxaemias.

C. W. O. BUNKER and J. J. MUNDELL (*Journ. Amer. Med. Assoc.*, September 13th, 1924, p. 836) have investigated the chemistry of the blood in pregnancy with a view to obtaining some warning sign of impending toxaemia. They were surprised to find no appreciable change in undoubted cases of eclampsia. Some patients with toxic symptoms, but without convulsive seizures appearing to be imminent, gave evidence of a decided nitrogen retention in the blood, and the authors consider that the combination of blood examination, clinical picture, and subsequent examination some months later, justifies them in classifying toxic cases into eclamptic and nephritic toxaemias. They conclude that if nitrogen retention is present in a case of pregnancy toxaemia, either in the case of the non-protein nitrogen or of the uric acid, it strongly suggests that nephritis is the predominating factor.

366. Radioscopy in Obstetrics.

M. N. MOSS (*Minnesota Med.*, vol. 7, No. 9, p. 586) is an enthusiastic advocate of the use of *x* rays in obstetrics, especially during the last month of pregnancy, in the case of all primiparous patients and also of multiparae in whom some problem is present. By their use (1) the normality or otherwise of the relationship between the head and the pelvis can be determined, and thus large heads can be recognized and dealt with; (2) multiple pregnancy can be discovered; (3) the foetal position and presentation can be ascertained; (4) a monstrosity may be diagnosed—a point of great importance in the after-treatment, since, if any difficulty is encountered at labour, perforation of the head will be performed in preference to a difficult forceps delivery, symphysiotomy, or Caesarean section; (5) death of the child can be recognized by the detection of overlapping of the cranial bones, which gives the head an irregular outline; (6) a certain diagnosis of pregnancy can be made in some obscure cases. He adds that *x* rays used carefully are in no way harmful to the baby, and are especially useful in any case in which there is a prospect of difficult labour or Caesarean section.

367. Fibromyomatosis of the Corpus Uteri.

H. L. MURRAY and E. GLYNN (*Brit. Journ. of Obstet. and Gynaecol.*, Autumn Number, 1924, p. 398) describe a case in which the whole of the body of the uterus was the seat of a diffuse fibromyomatous change. No isolated or encapsulated tumour nodules were present; the cervix was completely unaffected, and no trace of adenomyomatous tissue was found. A similar case has been described by Cullen under the name "general myomatous tendency," but the authors suggest the term "complete fibromyomatosis." Histological examination of the specimen in their case showed remarkable vascularity with numerous capillaries and arterioles of an embryonic or naevoid type; these conditions are probably associated with the genesis of the morbid condition. The patient, a woman aged 31, had had menorrhagia and aching in the back, hips, and groin for six or seven months; the rounded enlarged uterus was 6 inches long and 5½ inches broad, and together with the appendages weighed nearly 3 lb. Uninterrupted recovery followed the removal of the uterus.

368. Treatment of Severe Dysmenorrhoea.

F. A. CLELAND (*Amer. Journ. of Obstet. and Gynecol.*, September, 1924, p. 337) has found that in severe dysmenorrhoea the administration of ovarian, thyroid, pituitary, corpus luteum, and mammary extracts, alone or in combination, is no more effective than exhibition of iron, aloes, strychnine, and manganese. In 230 cases of severe disabling dysmenorrhoea, in 117 of which the patients were unmarried, he has had good results from an operative treatment of which the essential step is the division of the muscular fibres at the level of the internal os, with the object of causing the nulliparous to resemble the parous uterus. One is apt to forget, he remarks, that essential dysmenorrhoea is always cured by childbirth. Dilatation to No. 10 or 11 (Hegar) having been effected, two lateral incisions about 1/12 in. to 1/16 in. are made with a blunt-pointed bistoury in the internal os; dilatation is now continued to 14 or 15. To prevent subsequent contraction the uterus and cervix are firmly packed with iodoform gauze, which is left undisturbed for eight days. The strictest aseptic precautions are, of course, necessary. A slight rise of temperature usually occurs on the second day. Twenty-nine of the author's patients were only partially relieved, and eight were no better after this operation.

Pathology.

369. A Bipolar Theory of Cancer.

G. W. CRILE (*Annals of Surgery*, September, 1924, p. 289) urges the importance of considering the struggle for survival between the cancer cell and the normal cell, and of studying their nature and structure, so as to discover the physical differences that enable the cancer cell to multiply at the expense of surrounding tissues. He compares the phenomena of fertilization with those of malignant cell growth: "the whole histologic picture of malignancy indicates that it is primarily nuclear in origin." He believes that as the process of cancerous cell division is analogous to the segmentation of fertilized cells certain facts show that cancer falls within the domain of the electro-chemical, or bipolar, theory which is said to apply to normal living processes. Certain analogies exist, according to Crile, between cancer and pyogenic infection. Neither process usually attacks tissues of "high oxidative capacity," such as heart muscle, voluntary muscle, cerebral cortex, normal thyroid, liver, kidney, or spleen; they rather attack regions where the "cellular defence" is weaker. Once the invading force of cancer cells or pyogenic organisms has passed the first line of defence it takes the path of least resistance—namely, the lymph channels and connective tissue—rather than attacking solid cellular organs. Both cancer and septic infection are opposed by vigorous metabolic activity in the defending structures. Crile has come to the conclusion that (1) the difference between the living and the non-living tissues depends on the accumulation of free energy on the di-electric lipoid films which surround the nucleus, the cytoplasm, and the numerous spherules within the cells; (2) the charges are derived from oxidation; (3) intracellular oxidation is governed by the differences in energy potential between the nucleus and the cytoplasm; (4) therefore cellular growth and special function are both dependent upon structure and energy potential. This interpretation of cancer assumes that the difference between the cancer cell and neighbouring cells of lower potential is analogous to the difference between the unfertilized and the fertilized ovum. The analogy ends with the establishment of cell division, for cancer cells have little or no differentiation. Crile states that if this biophysical interpretation be correct, cancer tissue must fulfil the following requirements: (1) the cancer cells must have a high storage capacity for electric charges; (2) the conductivity of cancer tissue must show specific variations from that of normal tissues—that is, the lipoid films (*a*) of cancer cells, (*b*) of normal cells, and (*c*) of fertilized cells would take electric charges in a direct ratio to the combined surface area of their lipoid films. He adds that the investigations of his collaborators tend to establish this theory of cancer.

370. The Serological Grouping of Streptococci from Scarlet Fever.

G. H. EAGLES (*Brit. Journ. Exper. Path.*, August, 1924, p. 199) examined 51 strains of haemolytic streptococci; of these 19 came from cases of scarlatina, 13 from cases of puerperal sepsis, 5 from cases of erysipelas, and 14 from miscellaneous sources. Against one or more strains from each of these groups immune serums were prepared by injecting rabbits first with heat-killed and later with living organisms. The suspensions for agglutination were made up by suspending the deposit from a centrifuged broth culture, twenty-four hours old, in broth of *p*H 7.6, shaking vigorously, and standardizing to a fixed opacity. All serum dilutions were prepared with the same lot of broth as was used for making the suspensions. The tubes were incubated in a water-bath at 56° C. for two hours and read immediately. The results showed quite clearly that the scarlatinal organisms formed a group of their own; with only one exception all of the scarlatinal strains were agglutinated by each of the seven serums prepared against strains of scarlatinal origin, whereas they responded only slightly, if at all, to any of the serums prepared against organisms of non-scarlatinal origin. Having in this way confirmed the findings of other workers, he set himself to trace the fate of streptococci in the throats of patients recovering from scarlet fever. Throat swabs from 11 such cases were cultured on blood agar at intervals of three or four days, 10 colonies picked, and each tested with an agglutinating serum prepared against a scarlatinal strain. On the whole it was found that the haemolytic streptococci tended to diminish in numbers after the second week, but more important than this was the loss in agglutinability which they displayed: whereas the organisms which were isolated during the early phase of convalescence generally agglutinated highly with the specific serum, those isolated during the latter part were agglutinated hardly at all. The explanation of this may lie in the fact that the *Streptococcus scarlatinae* is replaced by other types of streptococci during convalescence, or that under the influence of antitoxin generated by the patient the *Streptococcus scarlatinae* suffers an injury which alters its specific antigenic properties. The author seems to favour this latter view.

371. Bacteriology of Scarlet Fever.

F. A. STEVENS and A. R. DOCHEZ (*Journ. Exper. Med.*, October, 1924, p. 493) describe the isolation of a group of streptococci which agglutinates with scarlatinal immune serums. These streptococci have been recovered from the throats of 65 per cent. of cases of scarlet fever during the first week of the disease, and also from the throats of patients at the termination of quarantine—thirty days. These carriers of specific streptococci are usually those in whom tonsillar inflammation has not entirely subsided. The authors suggest, as a result of their findings, that the complications occurring in scarlet fever are either due to the original scarlatinal strain of streptococci or may be the result of a secondary infection with pyogenic strains of streptococci. Both contingencies were shown to occur.

372. The Pathogenesis of Purpura Haemorrhagica.

M. CASTEX (*Il Policlinico*, October 1st, 1924, p. 510), after referring to the numerous classifications of purpura haemorrhagica and the various theories as to its etiology and pathogenesis, quotes two cases observed by him, which in his opinion go a long way towards supporting the nervous theory of its origin. Both patients were the subjects of arteriosclerosis, and died of terminal pneumonia. At the necropsy marked changes were found in the medulla at the level of the superior lateral sympathetic nucleus; the rest of the nervous system was healthy. Gordon recorded a similar case of purpura where changes were noted in the corresponding part of the medulla. In all cases of purpura there is probably an infection the toxin of which has an elective affinity for this part of the medulla. The symmetry and radicular distribution of the rash is also suggestive of a spinal lesion. There is nothing extraordinary in suggesting that a toxin, like other poisons, should show a preference for one particular part of the body.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

373. Intracranial Aneurysm.

R. FITZ (*Boston Med. and Surg. Journ.*, September 18th, 1924, p. 521) states that cerebral aneurysm is not a remarkably rare condition; Beadles (1907) collected particulars of 555 cases. Fitz refers to recent papers by Charters Symonds and Harvey Cushing, who have described a fairly typical clinical syndrome found in many cases. The symptoms may be threefold: (A) Pressure symptoms referable to the base of the brain or the outer wall of the cavernous sinus. (B) Symptoms due to the systemic disease which caused the aneurysm. (C) Symptoms due to leakage from the sac. In Class A Symonds includes (1) pain in the region supplied by the first division of the fifth nerve, paresis or paralysis of the third, fourth, and sixth nerves, exophthalmos, and amblyopia due to pressure on the optic nerve. In Class B are symptoms of cerebral arterio-sclerosis, or, more rarely, of infective endocarditis. Fearnsides (1916) stated that syphilis was an exceedingly rare cause of cerebral aneurysm. In Class C are sudden headache or backache, followed by syncope. The cerebro-spinal fluid is blood-stained and relatively large fundal haemorrhages occur frequently. Cushing states that aneurysm should always be suspected when one or more sudden apoplectic attacks are followed by symptoms relating to the intracranial portion of the internal carotid. If there is subhyaloid haemorrhage, or blood in the cerebro-spinal fluid, the diagnosis is comparatively obvious. Fitz reports a typical case in a woman, aged 43, who had had one child, no miscarriages, and whose Wassermann reaction was negative. She had a history of eclampsia, convulsions, and Caesarean section. Evidence of high blood pressure was present at that time; this persisted, and more than two years before death there was oedema of the ankles and high blood pressure. In October, 1923, she had a sudden attack of unconsciousness with vomiting and epileptiform convulsions. On recovering consciousness the left eye was blind and the right amblyopic. Oedema of both discs was present, more marked in the right, and with evidence of old and recent haemorrhages, more plentiful in this eye. Three months later she complained of frequent headache and was easily fatigued. The systolic blood pressure was 190 mm., the diastolic 110 mm., and the second aortic sound was loud and ringing. In the urine there was a faint trace of albumin, a little renal epithelium, a few red and white corpuscles, and hyaline casts. Three months later she had a second attack of sudden unconsciousness with generalized convulsions. On recovering consciousness there was no paralysis, but tendon reflexes were absent; there was no ankle clonus, and Babinski's, Oppenheim's, and Kernig's signs were absent. The blood count showed excess of red corpuscles (7,420,000) and of leucocytes (33,700); the haemoglobin percentage was 135. The urine contained albumin, a small trace of sugar, red and white cells, and a moderate number of granular casts. On lumbar puncture 35 c.cm. of uniformly blood-stained fluid under great pressure escaped; she then regained consciousness rapidly, but a partial lower facial paralysis was observed. Stupor returned and she died twenty-four hours after admission. The necropsy showed the entire right cerebral hemisphere covered by dark red clot, except for a small area on the anterior surface of the frontal lobe. There was a sacculated aneurysm of the right internal carotid, which measured 16 mm. by 13 mm. and had ruptured; this pressed on the chiasma and the right optic nerve. With the exception of absence of unilateral oculo-motor paralysis and occipito-frontal pain all the symptoms corresponded with Charters Symonds's and Harvey Cushing's descriptions in *Guy's Hospital Reports* (April, 1923).

374. Melaena Neonatorum.

D. V. RAISZ (*Zentralbl. f. Gynäk.*, July 12th, 1924, p. 1550) points out that melaena neonatorum is not a clinical entity, but is a symptom of many diseases during infancy. Having satisfied himself that the milk supply was uncontaminated, he examined the stools of infants during the first three days of life, and in a series of 53 cases detected blood present in 34. He therefore holds that in a large number of newly born children there is occult bleeding from the bowel, the infants being in no other sense abnormal. He thinks that such bleeding can be considered as physiological rather than pathological, and that it may be compared with the catarrh of the newly born, which, beginning on the third day when the colostrum is replaced by milk, is a manifestation of the activity of milk-borne flora. Remembering the delicacy of the mucous membrane of the bowel, he adds, it is not surprising that this milk invasion, followed by the inevitable bacterial activities, should produce a hyperaemic or even a haemorrhagic reaction in the bowel: melaena neonatorum is only a further degree of this reaction due to an additional endogenous or exogenous factor.

375. Purpura in the Serum Disease.

L. PITAR (*Thèse de Paris*, 1924, No. 419) reviews the literature and classifies the varieties of purpura occurring during the serum treatment of diphtheria in the following three groups: In the first group purpura appears in the form of ecchymosis at the site of injection. Several cases of malignant diphtheria belong to this group in which the purpura is of diphtheritic origin. The second form of purpura in the course of diphtheria occurs at the time of the serum disease. The lesions of purpura are closely intermingled with those of the serum eruption, especially urticaria, and are often associated with a scarlatiniform or morbilliform erythema. Pitar records two examples of this group, in which the purpura is probably due to streptococcic septicaemia. The third form of purpura is associated with an urticarial eruption, but the blood culture is negative. In this variety, of which Pitar records one example, the purpura is entirely due to serum disease, being merely a further stage of the capillary dilatation which ordinarily accompanies this condition.

376. Nephritis due to Tuberculosis.

C. HOLTEN (*Ugeskrift for Laeger*, September 18th and 25th, 1924, pp. 687 and 711) has investigated the frequency with which nephritis of tuberculous origin occurs among the subjects of pulmonary tuberculosis. He notes that it is difficult to establish a definite connexion between pulmonary tuberculosis on the one hand and inflammatory, but not specifically tuberculous, changes in the kidney on the other. His material was obtained from his hospital, in which 1,200 to 1,400 patients with pulmonary tuberculosis are treated every year. In the period 1917–21 there were 3,619 cases of pulmonary tuberculosis, 20 to 25 per cent. of which were readmissions. Among them there were 124 cases of albuminuria, nephritis, and amyloid disease. In 45 cases there were reasons for believing that the renal disease, though not tuberculosis, was the outcome of the pulmonary tuberculosis. These 45 cases could thus be classified: haemorrhagic nephritis 12, haemorrhagic nephritis with amyloid dis ase 3, amyloid disease 23, amyloid disease complicated by renal tuberculosis 4, transitory albuminuria 2, granular kidney 1. The author concludes that amyloid disease is the most common of the non-specific renal complications of pulmonary tuberculosis, and that haemorrhagic nephritis comes next in frequency.

Surgery.

377. The Prognosis in Perforation of Gastric and Duodenal Ulcers.

O. E. CEDERBERG (*Finska Lakaresällskapets Handlingar*, July–August, 1924, p. 636) has collected 71 cases of operation for perforation of gastric and duodenal ulcers in his hospital in Wiborg from 1904 to 1923. Only 2 of these patients were females, and in 10 only was the duodenum perforated; in the remaining cases the pyloric end and the lesser curvature of the stomach were affected. In 30 cases the treatment consisted of simply closing the perforation and performing Braun's omentoplasty. The mortality in this class was 50 per cent., the length of the interval between perforation and operation being chiefly responsible for this poor result. Since 1914 gastro-enterostomy was often performed in addition to closure of the perforation, and among 34 cases thus treated there were only 6 deaths. The following figures show how important it is to operate early. Of the 17 patients operated on within six hours of perforation all recovered; of 14 operated on from six to twelve hours after perforation 84.7 per cent. recovered; of 13 operated on from twelve to eighteen hours after perforation 71.4 per cent. recovered; of 7 operated on from eighteen to twenty-four hours after perforation 42.9 per cent. recovered; and of 15 operated on more than twenty-four hours after perforation only 20 per cent. recovered. An investigation of the subsequent fate of the patients showed that only 30 per cent. of those who had been treated by simple closure of the perforation were in good health, whereas this was the case with 60 per cent. of the patients on whom gastro-enterostomy had been performed as a supplementary operation.

378. Spina Bifida and Meningocele.

T. S. KLOTS (*Nederl. Tijdschr. v. Geneesk.*, August 16th, 1924, p. 884), who records an illustrative case, states that Brickner classifies the conditions associated with a defect in the vertebral arch as follows: (1) Complete closure of the vertebral defect by a more or less dense connective tissue membrane, usually associated with adhesions to the superjacent soft parts and skin. (2) A band of connective tissue perforating the membrane and connecting the subcutaneous tissue with the spinal membranes so as to exercise a pressure on the cord. (3) Compression of the cord or its nerves by (*a*) an excessive growth of fatty tissue within the membrane, (*b*) a myofibrolipoma penetrating the spinal canal through the defect in the bony arch, (*c*) an exostosis in the spinal canal. (4) A degeneration or aplasia of the spinal nerves. (5) A protrusion of the dura through the defect leading to meningocele. (6) Hypertrichosis is frequently found, but its presence does not always indicate spina bifida. (7) Incontinence of urine is the rule in children and is often present in adults. (8) Pain, either localized or radiating into the legs, is less frequent. The most favourable time for operation is between 9 months and 2 years. Before the age of 9 months the mortality from the operation is very high, and after two years the prognosis is more unfavourable because the meningocele may increase in a large number of cases and the chances of perforation are greater. In adults the operative mortality is particularly high because generally the tumours round the sac become infected, so that operation should not be performed on adults unless the tumour is very large and is giving rise to distressing symptoms. Progressive hydrocephalus worsens the prognosis of operation for meningocele, the mortality in such cases being 50 per cent. It is therefore advisable when possible to wait till the end of the second year because the hydrocephalus may often become stationary of itself within the first two years of life. If an operation is undertaken during the presence of hydrocephalus puncture of the corpus callosum should be performed ten days before the operation.

379. Diverticulitis of the Colon.

E. S. JUDD and L. W. POLLOCK (*Annals of Surgery*, September, 1924, p. 425) point out that diverticulitis of the colon deserves consideration because of the frequency with which it is encountered and the severity of the symptoms manifested. There may be a solitary diverticulum in the colon, or a great many diverticula from the caecum to the rectum. In many cases the condition causes no symptoms and it is apparently not progressive. It is a disease of middle life and is usually seen in the sigmoid. In diverticulitis an abscess may form and later perforate into the intestine, bladder, or abdominal wall. If the inflammation remains chronic a tumour composed of fibrous tissue and the products of inflammation develops. The authors remark that it may be difficult to differentiate between diverticulitis of the sigmoid and a carcinoma. If there is a long history and the tumour has increased and receded from time to time it is probably due to a diverticulitis. In some cases a diagnosis can only be made after histological examination. If an abscess forms drainage is indicated, and if perforation occurs operation is the only procedure that offers relief. The mortality from radical operation has been high. The plan of procedure recommended is a preliminary colostomy to relieve any obstruction in the colon, and the reduction of the inflammation by frequent irrigations of the lower colon. The infected portion can then be resected with less risk.

380. Extensive Skin Regeneration without Grafting.

R. F. HERTZBERG and G. R. R. HERTZBERG (*Amer. Journ. of Surg.*, September, 1924, p. 236) describe a method of covering a denuded surface with a layer of epithelium, which grows rapidly across the wound from the skin edges at the rate of an eighth of an inch a day. The wound is first treated as though a skin graft were to be applied—that is, a healthy granulating wound is essential. This is washed with commercial petrol, which is a ready fat solvent and removes necrotic tissues; the surface is then lightly dried with gauze and the edges painted with a mixture of equal parts of Peru balsam and castor oil. The wound edges are next strapped with sterilized adhesive strips an inch wide, lying directly on the streak of balsam and completely encircling but not crossing the open area. Firm pressure on the skin edge is the important thing, and there must be no puckering. The centre of the wound is dressed with 1 or 2 per cent. dichloramine T in chlorcosane. The procedure is repeated daily. The authors find this method especially valuable in the treatment of large burns. They assert that healing is very rapid and that there is no cicatrization or contraction.

Therapeutics.

381. Emetine in the Treatment of Amoebic Abscess.

A. S. FRY (*Indian Med. Gazette*, October, 1924, p. 488) records two cases of large amoebic abscess of the liver in which complete cure of the patients was obtained by the hypodermic administration of emetine hydrochloride. In both cases the remedy was injected daily in 1 grain doses until 12 grains had been administered. In one case the effect was dramatic, the temperature falling to the normal after the second injection and remaining steadily subnormal thereafter. In the other case improvement in the temperature did not occur until the end of treatment. In both cases coexistent helminthic infections required eradication. Fry maintains that the induced spontaneous absorption of the large sterile abscess is in no way detrimental to the patient, but that, on the contrary, the general health improves concurrently. He believes that aspiration is unnecessary in many of these cases, and recalls the instructive analogy drawn by Sir Leonard Rogers between tuberculous and amoebic abscesses.

382. Iodine and Hyperthyroidism.

S. J. COWELL and E. MELLANBY (*Quart. Journ. Med.*, October, 1924, p. 1) studied the effect of iodine on hyperthyroidism in man. They kept careful records of the basal metabolic rate, pulse rate, weight, neck measurement, and general condition in eight patients, each of whom received a standard diet of about 1,800 calories, with the administration of potassium iodide in varying amounts and intervals. Small doses (1/10 grain daily) produced a lowering of the basal metabolic rate and clinical improvement which reached a maximum in from ten to twenty days. This was followed by a gradual return of symptoms, though not to the former extent, and withdrawal of the iodide after several months' treatment resulted in an exacerbation of symptoms, which, however, were relieved by a further administration of iodine. While apparently not curative, the authors find the treatment useful as an adjunct to other medical treatment and as a preliminary to operation. Those patients best withstood operative treatment in whom the iodine content of the thyroid was high. The response to iodine therapy resembles that following operation, in that periods of "primary improvement" and "relapse" were noted in those cases treated by iodine to be like those seen in exophthalmic goitre treated by operation. Apart from the fact that iodine is a constituent of thyroxin, the way in which it influences metabolism is not yet understood. The authors think that it is not possible to predict its effect in any given case, though patients with large hard thyroids seem more likely to develop reaction symptoms than those with smaller and soft ones. Within certain limits the actual amount of iodine given does not appear to influence the rate of improvement, yet with very small doses the return of symptoms tends to be longer delayed and less severe than when larger doses are given.

383. Sodium Thiosulphate Treatment of Metallic Intoxication.

MARION R. GROEBL and C. N. MYERS (*Therap. Gaz.*, October 15th, 1924, p. 691) report fully on some 75 cases of arsenical poisoning benefited by sodium thiosulphate. The two most serious conditions arising from the continued use of salvarsan are arsenical dermatitis and jaundice. A 0.4 per cent. solution of sodium chloride injected intravenously was found to diminish the risk of the uneven distribution of the semi-colloidal arsphenamines in the tissues. Concentrated solutions of glucose or lactose were also used as the diluting medium, 2 to 4 grams of the sugar being best tolerated. Sodium thiosulphate was found to be still more useful, and was also used in mercury and lead poisoning. The thiosulphate had a low toxicity, and could be given either by the mouth or intravenously, the latter method being found to be more efficacious in stimulating the excretion of the metals; 30 grains by the mouth could be given per day. In nearly all their cases the authors determined the amounts of arsenic in the blood, urine, and in epidermal scales before and after the administration of the thiosulphate. Details of three cases are given, the first being dermatitis exfoliativa following arsenical treatment for xeroderma Kaposi, the second scleroderma due to skin absorption of arsenic from fur, the third poisoning by illicitly distilled spirit ("moonshine"). The authors state that the salt stimulates the excretion of the arsenic both through the kidneys and the skin, but only freshly prepared solutions should be used. A bibliography of thirteen papers is given.

384. Hyoscine Treatment in Post-encephalitis.

L. B. HOHMAN (*Johns Hopkins Hosp. Bull.*, October, 1924, p. 335) reports eighteen cases of the Parkinsonian syndrome following epidemic encephalitis in which hyoscine hydrobromide treatment was administered with considerable success. The average dose was 1/100 grain four times a day, and the maximum 1/50 grain. In no case was it necessary to increase the dose as the result of tolerance being acquired. No bad effects were observed, except that some slight difficulty in accommodation, giddiness, and somnolence occurred whilst the dosage was being regulated. As soon as the effective therapeutic dose was determined all untoward symptoms disappeared, with one exception in which it was not certain that the treatment was regularly followed. Of the eighteen patients six were slightly improved, five definitely better, and in seven the improvement was very marked, the patients returning to work after several months of invalidism, some having even been bedridden. In the slightly improved cases some relaxation of the rigidity occurred, but was insufficient to increase the practical efficiency of the patients. The mental improvement was very striking in a number of patients, and Hohman urges that mental change ought to be considered a fundamental part of the disease.

Anaesthetics.

385. General Anaesthesia with Acetylene Gas.

T. BRANDT (*Norsk Mag. f. Laegevidenskaben*, August, 1924, p. 669) is much impressed by the value, as a general anaesthetic, of pure acetylene gas, which is very different from the gas of a carbide lamp. Since Wieland and Gauss published their investigations in February, 1923, in the *Klinische Wochenschrift*, several large hospitals in Germany have tested this new anaesthetic and have found it to be satisfactory from many points of view. It is given with oxygen in various concentrations, and the apparatus is therefore rather complicated. The patient rapidly loses consciousness without that preliminary respiratory inhibition which is often so distressing with ether and chloroform anaesthesia. There is seldom any excitation, and anaesthesia is complete in one to two minutes, though it may take five minutes for the muscles to relax fully. Indeed, muscular relaxation may not be complete, and for this reason it may sometimes be necessary to resort to ether or chloroform for laparotomies. Brandt states that the patient can be kept under the anaesthetic for hours with impunity, and that there is no risk of overdose, because even in the highest concentrations the gas seems incapable of paralysing the respiratory centre. When the operation is completed the mask is removed, and if the mixture of acetylene has been weak the patient recovers consciousness almost immediately; even when the mixture has been strong consciousness is recovered in two to five minutes. The patient feels quite well, and headache and nausea are rare. The disadvantages of acetylene anaesthesia are its rather high cost, the complexity of the apparatus, the inflammability of the gas, the absence of complete muscular relaxation in some cases, and the increase of blood pressure which is provoked and which contraindicates this gas for patients already suffering from this condition.

386. The Dangers of Local Anaesthesia.

L. CHEINISSE (*Arch. de med., cir. y esp.*, October 11th, 1924, p. 49) alludes to the 43 deaths following the use of local anaesthetics which were investigated by the United States Council of Pharmacy and Chemistry. A detailed study of the cases showed that in 40 of the 43 cases death was solely or mainly due to the local anaesthetic; 24 of the cases were in males and 16 in females. The youngest patient was aged 3 and the oldest 70. Twenty occurred in hospital, 10 in consulting rooms, 6 in dispensaries, and in the rest no details were given. As regards the position of the patient at the time of administration of the anaesthetic, 15 were lying down and 21 were in a sitting position; about the others no statement was made. Autopsies were performed in 20 cases, but did not show any lesions indicating individual susceptibility such as status lymphaticus. Most of the deaths were due to cocaine employed in solutions of a strength ranging from 0.5 to 20 per cent., especially after application to the throat for removal of tonsils. In other cases cocaine was applied in the form of a paste in combination with adrenaline. Many deaths were due to the use of strong solutions of cocaine associated with extremely large doses of adrenaline. Intra-urethral injections of cocaine proved particularly dangerous, especially in cases of trauma or stricture. The following applications seemed to be harmless: a solution of 5 per cent. cocaine for conjunctival, buccal, and pharyngeal use, and a solution not exceeding 10 per cent. for intranasal application and for the larynx and bronchi. The rule should be that, whatever mode of application is employed, the dose of the local anaesthetic should be rigorously fixed, and preparations of unknown composition and concentration should be avoided. Freshly prepared and sterilized solutions should always be used.

387. Open Ether Administration.

A. OGSTON (*Brit. Journ. Anaesth.*, October, 1924, p. 76) describes a simple addition to the ordinary gauze-covered mask for open ether administration which obviates the objections to prolonged induction and wastefulness. The gauze retaining ring is replaced by a ring carrying wire uprights about four inches long and connected at their upper ends by another slightly wider ring. After the mask has been covered with gauze and the retaining ring closed, a folded towel is wound tightly round the upright frame, so that it fits closely round the bottom, thus forming a cylinder having the gauze mask at the bottom and its wider opening uppermost. Into this prepared mask, resting upon a pad of cotton-wool with a hole in the centre large enough to uncover the nose and mouth, ether is dropped, at the rate of about one drop every two or three seconds, round the sides of the gauze, avoiding the centre for the first minute, the rate of dropping being increased as rapidly as the patient can tolerate it, continuous dropping to keep the gauze thoroughly wet being aimed at. By this method ether otherwise wasted is utilized, and the expired ether vapour becomes available to augment the percentage of ether in the next inspiration. The induction period can be reduced and made pleasanter by open nitrous oxide-ether sequence if the tube from a nitrous oxide cylinder is held just inside the top of the mask until consciousness is lost, when the cautious administration of ether commences until automatic breathing is established. The nitrous oxide is then cut off and the anaesthesia continued with ether alone.

Obstetrics and Gynaecology.

388. Primary Chorion-epithelioma of the Ovary.

D. DOUGAL (*Brit. Journ. of Obstet. and Gynaecol.*, Autumn Number, 1924, p. 387) gives details of nine cases of primary chorion-epithelioma of the ovary described in the literature, and adds a new case. In the majority of cases the patients were young (under 31); all patients save one had been pregnant, the last recognized gestation having usually preceded the operation by one to two years. The symptoms were (1) abdominal pain, (2) irregular bleeding, preceded in about half the cases by (3) a period of amenorrhoea. Of ten cases seven were fatal, the majority soon after operation; no patient survived the operation longer than two years. In the author's case the second pregnancy terminated in a four months' abortion; nine months later there was abdominal pain accompanied by dark haemorrhagic discharge. An abdominal swelling was now noted, together with amenorrhoea for the five months preceding operation. The right ovary was considerably enlarged and contained numerous lutein cysts. The soft enlarged uterus contained an intact decidua, but was entirely free from growth. The left Fallopian tube was normal save for flattening from pressure; ovarian tissue was recognized both in the centre and periphery of the large chorion-epitheliomatous growth on the right side. The author has not found any record of other cases in which ovarian or broad ligament chorion-epithelioma has been associated with the presence of a decidua in the uterus, but such a structure has been found there in cases of extra-placental chorion-epithelioma in the vagina, in the myometrium, and in the brain, lung, and kidney. Dougal adds that the likeliest explanation of the occurrence of primary chorion-epithelioma in the ovary is a preceding ovarian pregnancy.

389. The Endometrium of the Menstruating Uterus.

E. NOVAK and R. W. TE LINDE (*Journ. Amer. Med. Assoc.*, September 20th, 1924, p. 900) report twelve cases of removal of the uterus at some time during menstruation for either pelvic inflammatory disease or myoma. In all these patients the menstrual rhythm had been perfectly normal and the menstrual dates were carefully checked. Great care was taken to avoid injuring the endometrium during the operation. As a result of their study of this material they are convinced that extensive loss of tissue is the rule during menstruation, the entire superficial or compact layer, as well as most of the deeper or spongy layer, being thrown off. On the first day the mucosal surface may be intact, but more often it shows commencing loss of tissue; by the second day the throwing off has become very extensive. Rejuvenation changes are usually evident on the third day, and may be quite marked. The mucosal desquamation is preceded by

extensive infiltration with polymorphonuclear leucocytes and lymphocytes. The mucosal throwing off does not usually occur as an extensive shedding in large masses, but is rather a kind of crumbling molecular process. These results favour the modern conception of menstruation as consisting of a premenstrual hypertrophy of the endometrium in preparation for the impregnated ovum, together with an ensuing katabolic process to which the name "menstruation" is usually given when no fertilized ovum is present. The authors add that there is much truth in the saying that "women menstruate because they do not conceive."

390. Myomata in the Puerperium.

E. W. FISCHMANN (*Surg., Gynecol. and Obstet.*, September, 1924, p. 227) agrees with Bland-Sutton that the danger arising from gestation complicated by myomata, far from terminating with labour, extends well into the puerperium. Post-partum haemorrhage is fairly common, and, if due to intramural or sessile submucous growths which interfere with uniform retraction of the uterus, is usually early and often alarming. Pedunculated submucous growths interfere less with retraction, but may be a cause of considerable haemorrhage at the time of their expulsion from one to five weeks after labour. Puerperal infection after gestation in the myomatous uterus is relatively common, and is frequently due to the necessity for intervention. As a rule uterine involution is retarded. Inversion of the uterus is not uncommon, and usually accompanies an attempt of the organ to expel the myoma per vaginam. Turning to the effect of the puerperium on the myoma, the author states that in the majority of cases the tumour diminishes considerably in size, but he casts doubt on the cases of complete disappearance of fibromyomata after delivery which have been recorded. Exceptionally the tumours may increase in size after labour because of progressive fatty or myxomatous changes. Abscess formation and gangrene are not very uncommon in myomata after pregnancy is over. With respect to treatment, it is advised that when pregnancy in a myomatous uterus has continued to term, Caesarean section, with an immediate myomectomy or hystero-myomectomy, is the operation of choice; when the myoma is not discovered until during labour or in the puerperium, conservative measures should be practised as long as possible.

Pathology.

391. Phagocytosis and Cellular Reactions in Immunity.

S. METALNIKOV (*Ann. de l'Inst. Pasteur*, September, 1924 p. 787) reports some experiments on the processes of infection and immunity in caterpillars. His general procedure was to inject a small quantity of emulsion into the body of the caterpillar, and, by making films of the blood during the subsequent hours, to determine the amount of phagocytosis which occurred. Emulsions of various kinds were employed, mainly consisting of dyes or of bacteria. The injection of dyes was followed rapidly by phagocytosis, so that in five to eight hours all the particles had been injested and removed from the blood. In the case of organisms the reaction which followed depended largely on the particular species injected and the dose in which it was given. Generally speaking, it was found that the organisms which are pathogenic to man, such as the tubercle, plague, diphtheria, leprosy, tetanus, and anthrax bacilli, were comparatively harmless to the caterpillar, whereas the saprophytic organisms, such as *B. subtilis* or *B. anthracoides*, were highly pathogenic. Exceptions occurred, however, as in the case of cholera vibrios and pneumococci. Once ingested the bacilli were digested by the intracellular ferments of the phagocytes. If a very large number of bacilli were given, the leucocytes frequently collected around them, fusing into plasmodia; in this way digestion seemed to be more easily accomplished. In the case of tubercle bacilli giant cells were formed; sometimes actual capsules appeared completely encircling the bacilli, which then gave rise to a process of caseous degeneration. The phagocytes seemed to find little difficulty in dissolving these organisms; within a few hours the majority of them were taken up by leucocytes and lysed. If the "cold-blooded" type of tubercle bacillus was used the result depended on the temperature at which the caterpillars were kept after injection. When they were maintained at 15° to 18°C. phagocytosis was very active, but intracellular digestion was in abeyance; in consequence, the bacilli multiplied within the leucocytes, ruptured them, and gave rise to a fatal infection. When, however, they were kept at 37° C. not only was phagocytosis very active, but intracellular digestion proceeded apace, so that the organisms were completely destroyed. It has been held by many workers that phagocytosis is inversely proportional in degree to the virulence of the organism; the author does not agree with this, as he finds that many highly virulent bacteria which give rise to rapidly fatal disease are often ingested with eagerness. He considers rather that virulence must be regarded, not as a cause affecting phagocytosis, but one proceeding from it. It is the organisms which for some reason or other the leucocytes will not attack that prove virulent. He comes to the reasoned conclusion that phagocytosis must be regarded as the most important defence of the individual; the part played by antibodies is merely an accessory one, confined to the higher animals. He is thus a strong advocate of the present French school which is teaching the importance of cellular immunity.

392. Production of Antibodies by Cutaneous Immunization.

A. GRATIA (*C. R. Soc. de Biologie*, October 7th, 1924, p. 795) brings forward evidence which throws a considerable amount of doubt on the accuracy of Besredka's conclusions with regard to the mechanism of the production of immunity to anthrax by the cutaneous method of inoculation. Besredka found that he was able to protect guinea-pigs against the injection of virulent anthrax bacilli by vaccinating them previously by the cutaneous route; this was of particular interest because vaccination by other routes, such as the subcutaneous, proved ineffective. Failing to find antibodies in the blood of animals which had received the cutaneous vaccination, he came to the conclusion that the skin was the only organ in the body which was susceptible to anthrax, and that by rendering it insusceptible to infection by this organism, the whole body was protected. Gratia has repeated Besredka's experiments, and finds that though his facts are partly correct, his explanation is very doubtful. He states that the assertion that guinea-pigs can be protected by cutaneous inoculation is perfectly true, but the report that there is no antibody formation in response to this procedure is unfounded. In the serums of these animals Gratia has been able to demonstrate the presence of agglutinins even in a dilution of 1 in 10,000. Moreover, the existence of protective bodies can be demonstrated by mixing the serum of the animal (vaccinated cutaneously) with anthrax bacilli, leaving the mixture for half an hour, and then injecting it into normal guinea-pigs. The animals remain perfectly well, whereas those injected with a mixture of normal serum and anthrax bacilli succumb. It is therefore clear that antibodies are formed in response to cutaneous vaccination, and that they cannot be excluded from consideration when accounting for the immunity produced in this way. The author thinks that the most likely interpretation is that, when the bacilli are injected into the skin, they are able to multiply and to give off their toxic products; to these the animal reacts by forming immune bodies, particularly anti-aggressins, which confer a high degree of immunity upon it. On the other hand, when the baccilli are introduced subcutaneously, they are taken up by the leucocytes before they have had time to liberate their aggressins, and the response of the animal is therefore less strong. In a paper with Bernice Rhodes (Ibid., p. 797) Gratia shows that the cutaneous vaccination of guinea-pigs with cholera vibrios likewise gives rise to immune bodies, which can be demonstrated by the production of passive immunity in normal animals injected with the blood of animals vaccinated by this route. Similarly, by vaccinating rabbits cutaneously against chicken red cells, they were able to demonstrate the appearance of haemolysins in the blood. From all these experiments it is concluded that the hypothesis of local immunity put forward by Besredka is not in agreement with observed fact.

393. Digestibility of Fresh and Sour Milk.

ORLA-JENSEN and B. SPUR (*Ugeskrift for Laeger*, September 4th, 1924, p. 655) give an account of tests they have recently conducted on fresh and sour cow's milk. They state that since cow's milk possesses a very considerable "buffer" action, it is obvious that the more sour it is the more easily will it be digested by pepsin. The point is one of considerable importance for persons whose gastric juice is deficient in hydrochloric acid. The authors, being under the impression that accurate investigations have not hitherto been made in this field, have studied the rate of artificial digestion with a constant strength of pepsin (0.2 per cent.) and varying degrees of acidity. The cow's milk was sterilized and kept at blood temperature in a thermostat in which artificial digestion was promoted by constant movement. No absolutely uniform parallelism could be established between the hydrogen-ion concentration of the milk and the ratio of dissolved to undissolved nitrogenous matter from time to time. It would therefore seem possible that it is not merely the hydrogen-ion concentration of the milk, but also the specific character of the acid radicals, which influences the rate of digestion. But, as the authors anticipated, it was found that acidified milk was more easily digested than fresh milk.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

394. Vagotonia.

H. L. HEIMANN (*Med. Journ. of South Africa*, September, 1924, p. 28) records two cases of vagotonia occurring in big, energetic men. The first patient, aged 67, retired, had complained for eighteen months of attacks of giddiness preceded by sweating and followed by nausea, headache, and at times unconsciousness suggestive of heart-block. Epilepsy and the Stokes-Adams syndrome were negatived by the absence of nervous manifestations during the attacks. Electrocardiographic examination disclosed no abnormality, but during the coughing and deep inspiration there was slowing of the pulse. Under graduated gentle exercise, avoidance of tobacco, removal of septic teeth, and dieting to prevent gastric distension, together with tinct. belladonnae m v t.d.s., the attacks ceased. The second patient, aged 52, complained of breathlessness and inability to lie down. His lips were blue, but there was no distension of the jugulars and no sign of cardiac, pulmonary, or hepatic abnormality, either on physical or x-ray examination. It was concluded that the vagus was hypertonic, thus causing bronchial spasm and breathlessness, and accounting for the low blood pressure, 120/65. As this patient had spent most of an energetic life in the blazing sun near Nairobi, it was suggested that the condition was secondary to suprarenal exhaustion due to a combination of hard work and excessive exposure to sunlight. Improvement followed residence at a lower altitude, dental treatment, dieting, and medicine as in the first case, with the administration of suprarenal gland cryst. gr. j, and ext. thyroid sicc. gr. $\frac{1}{2}$.

395. Pseudo-malarial Attacks in Typhoid Fever.

G. CAUSSADE and H. LE RASLE (*Presse méd.*, September 13th, 1924, p. 745) record six cases of the pseudo-malarial type of fever, first described by Jaccoud in 1884, which occurs during defervescence or at the beginning of convalescence from typhoid. In most cases the attacks are quotidian, but in rare instances are bi-quotidian or tertian. The attacks may be of short, moderate, or long duration. The end of an attack is marked by sweating, and a fall of temperature which is sometimes very sudden and as low as 95.4° F., but occasionally the temperature may remain above normal at the end of an attack and oscillate for some days about the level of 100.4°. Polyuria is frequent at the end of the attack, and may be as much as 5 pints in the twenty-four hours for several days. Recovery is the rule. In the diagnosis cholecystitis, pyelonephritis, and a relapse of malaria must be excluded. If malaria is present, quinine will have a successful effect upon the attack, and all doubt will be removed by finding the malarial parasite in the blood.

396. Clinical Manifestations of Vitamin Deficiency.

C. E. BLOCH (*Ugeskrift for Laeger*, October 16th, 1924, p. 783) has treated 70 cases of xerophthalmia, some having been under observation for a considerable time before the xerophthalmia developed. In most of these cases the diet had long been deficient in vitamin A, but it had not been completely free from this vitamin except in a few cases, for even centrifugalized and butter milk may contain some vitamin A. A close study of all these cases led to the conclusion that the xerophthalmia depended not only on an inadequate supply and faulty assimilation of vitamin A, but also on two other factors—namely, growth of the child and infectious diseases. It would seem that both these factors entail an abnormally great consumption of vitamin A, and that xerophthalmia and other signs of vitamin A deficiency are not merely the outcome of an inadequate supply of this vitamin, but also of a temporarily exaggerated need on the part of the organism for such vitamin. While xerophthalmia is pathognomonic of vitamin A deficiency, arrest of development, loss of weight, reduced mental and bodily vitality, and impaired immunity to infections are sequels not peculiar to a shortage of vitamin A. The author records in detail two cases in which deficiency of vitamin A in children seemed to depend not so much on an inadequate supply of vitamin A as on its inadequate absorption. This was due to disease of the liver, as indicated by jaundice. In the second case the tendency to develop xerophthalmia was further aggravated by the development of pneumonia. This observation, that vitamin A deficiency may depend on inadequate absorption of an adequate supply of vitamin A, led the author to give cod-liver oil by subcutaneous injection in five cases of xerophthalmia. The oil was sterilized in boiling water, and first 0.5 c.cm. and later 1 c.cm. were injected every day. All these patients recovered, but as they were also given a plentiful supply of vitamin A by the mouth the author cannot give irrefutable evidence in support of his definite impression that these subcutaneous injections were very beneficial. At all events they were painless for the first few days, but after four to eight days they provoked redness and tenderness, with general malaise and an evening temperature between 99° and 102° F. In no case did abscesses form, and the benefits obtained more than compensated for the discomforts inflicted.

397. Post-scarlatinal Eruptions.

J. KLEEBERG (*Zeit. f. Kinderheilk.*, August 30th, 1924, p. 577) states that hitherto post-scarlatinal eruptions have been regarded as very rare. His own experience, however, has been very different, as he has observed them in 42 out of 115 cases under treatment in the department for infectious diseases of the Rudolf Virchow Hospital in Berlin between September, 1923, and May, 1924. Age and sex were of no etiological significance, as the rashes were seen alike among infants and persons of 60. They were commonest in obese persons. The eruption usually appeared at the end or middle of the second week, and usually lasted five to eight days. The buttocks and patellae showed the first lesions, and the legs and trunk were next affected, but there was no regularity in the order of their involvement. The distribution of the lesions was symmetrical. If the eruption first appeared on only one arm or leg it became bilateral the next day. The favourite sites were the buttocks, patellae, femoral triangle, and calves. The arms were rarely affected, and the face, neck, and chest always remained free. No mucous membrane rash occurred, nor sore throat. The initial lesions consisted of discrete punctate red papules, which, after six to eight hours, increased in size and number. The peripheral parts of the lesions desquamated freely even when desquamation on the trunk had not begun or had not finished. The general condition did not appear to be affected. There was no rise of temperature or digestive disturbance. Examination of the blood showed a normal or slightly increased eosinophil count and a slight lymphocytosis. Post-scarlatinal eruptions bear no relation to the primary rash of scarlet fever as regards their duration, extent, or intensity.

Surgery.

398. A New Treatment for Surgical Tuberculosis.

A. VAUDREMER (*Presse méd.*, October 8th, 1924, p. 801) refers to his discovery (with Louis Martin) in 1900 of a tuberculous poison other than tuberculin, rapidly fatal to guinea-pigs when injected into the arachnoid or the peritoneum. Its toxicity varies with different strains: among fourteen strains they found one which was very virulent. The toxin is not eliminated by the bacilli unless they are from old cultures, granular, still acid-resistant, but surrounded by bodies which stain with methylene-blue. Bezançon and Philibert published an important study of these bodies (*Revue de la Tuberculose*, July, 1914). Vaudremer describes the experiments which have led him to conclude that tuberculin has a sensitizing action in men and animals. He holds that tuberculin should not be present in bacilli used for therapeutic purposes, and that the bacilli should be deprived of their acid resistance. Both may be removed by the proteolytic and lipolytic action of certain moulds, one of the most active being *Aspergillus fumigatus*. A filtered culture of this mould, to which tubercle bacilli had been added, was incubated at 38° C. for one month; it was then found that one-fourth of the bacilli had disappeared and that the remainder had lost their tuberculin, acid resistance, and their virulence was attenuated. Rabbits and guinea-pigs injected intrameningeally with massive doses of the "macerated" bacilli resisted subsequent intrameningeal injections of virulent tubercle bacilli. Moreover, guinea-pigs injected subcutaneously with five drops of bacillary emulsion (in four doses at monthly intervals) survived for five to twelve months, even when treatment was only commenced a month after infection. The filtered fluid in weekly doses of 1 c.cm. was also active in guinea-pigs. Infected animals with inoculation ulcers recovered and lived sometimes for more than a year. Vaudremer has treated 15 cases of advanced surgical tuberculosis at La Salpêtrière with a bacillary emulsion

prepared from four strains of virulent human tubercle bacilli and one strain of bovine bacilli grown for one month on glycerin broth; then macerated for another month in sealed flasks with a filtered culture of *Aspergillus fumigatus*. The bacilli were then decanted, pounded in a sterile mortar, shaken up in distilled water, replaced in an ampoule, and boiled for five minutes. These dead bacilli, contrary to the usual experience, were tolerated remarkably well by animals and man. The emulsions are weak—scarcely opalescent; the dose is 0.5 to 1 c.cm. subcutaneously. The cases were watched by the surgical staff of the hospital; most patients had pulmonary lesions in addition to their surgical tuberculosis, and yet rapid and complete cures are reported in every case. Vaudremer concludes that it is possible to control the progress of surgical tuberculosis by subcutaneous injections of tubercle bacilli almost deprived of acid resistance, tuberculin-free, and killed by boiling. He did not detect any deviation of complement.

399. Retrosplenic Abscess in Typhoid Fever.

J. SABRAZÈS, R. DE GRAILLY, and DUCASSE (*Gaz. hebd. des Sci. méd. de Bordeaux*, August 10th, 1924, p. 498) state that collections of pus in the abdominal cellulo-adipose tissue are rarely found nowadays in autopsies in cases of typhoid fever, but are probably more frequent than is supposed, as several cases were recorded by the earlier writers. Three cases of perisplenic suppuration which was not discovered until the autopsy were reported in the pre-bacteriological era by Griesinger. The present authors record the case of a girl, aged 20, who had an attack of ataxo-adynamic typhoid fever in which the pulmonary symptoms predominated. After death, in addition to the intestinal lesions characteristic of typhoid fever and splenopneumonia of the left lung, an abscess was found in the retrosplenic region independent of the spleen, of the size of a pigeon's egg, without any perforation of the splenic capsule, inflammation of the mesenteric glands, or focus of osteitis or myositis. The pus contained a pure culture of typhoid bacilli.

400. Thrombosis of the Lateral Sinus.

BINET of Besançon (*Rev. de Laryngol., Otol. et Rhinol.*, August 31st, 1924, p. 533) describes four cases of lateral sinus thrombosis following old-standing middle-ear suppuration. All the patients were young, and three of the four were males. The first patient had undergone several previous operations in the hope of eradicating the suppuration, and, permission for a further operation being withheld, observation continued until death. For three and a half months the patient was under treatment for widely fluctuating temperature, frequent rigors, and attacks of hyperpyrexia. There was a very profuse discharge from the ear, and an abscess formed around the jugular vein and had to be opened. Finally, after a violent attack of headache, the patient passed into a state of coma and died. Of the remaining cases, which were all operated upon, two recovered rapidly and the third died of pneumonia. Binet points out that in very many cases the development of the thrombosis is very insidious, especially in the case of a mural clot and where the infection is very slight. In some of these cases the first symptoms may be due to emboli. The author points out the danger of curetting the sinus, and restricts himself to wide incision. He believes in ligature of the jugular vein in addition to opening the sinus in all cases where the signs are well marked, and especially when there are rigors. To stop the haemorrhage from the upper end of the sinus he adopts the plan of packing the interior of the sinus. He remarks on the extreme rarity of gangrene of the inner wall of the dural coat of the sinus. The only possibly successful method of treating the condition is that of immediate and most thorough operation.

Therapeutics.

401. Intracardial Injection of Adrenaline.

E. A. KOCH (*Zentralbl. f. Gynäk.*, October 11th, 1924, p. 2234) reports the case of a child apparently dead from asphyxia neonatorum who was revived by an intracardial injection of adrenaline. At birth the child made a slight movement, passed urine, and then lay still, deeply asphyxiated. The cord was pulseless, so it was immediately cut, and mucus was aspirated from the trachea. No heart beats could be heard, and heart massage and artificial respiration were resorted to without success. After five or six minutes 5 minims of suprarenin were injected into the heart through an intercostal space, half an inch to the left of the sternum. Almost immediately the heart started to beat, at first irregularly with numerous extra-systoles—an occurrence previously noted by Frenzel. All methods were tried to start respiration, but it was not until half an hour had elapsed that the child was made to breathe and the skin took on a more healthy colour. No further trouble was experienced, and the child was well enough to suck from the breast on the second day. Koch states that the injection must be made within fifteen minutes at latest after the heart has ceased beating, and that not more than 8 minims should be injected into an infant, as 12 minims has been known to cause convulsions in a six months old child. He then examines recent statistics relating to the intracardial injection of adrenaline in other contingencies. He maintains that it is of very great value in surgical operations when the heart failure is due to the anaesthesia, or in cardiac failure caused by internal bleeding, or in shock and collapse following spinal anaesthesia. In such cases in adults a dose of 16 minims is injected; the number of reported successes is very striking, the statistics being taken from a number of writers. Adrenaline is apparently of little use when the heart failure is due to internal derangements such as heart disease, and very few successes in such cases have been recorded.

402. Fluid in Medical Treatment.

S. ISAAC (*Klin. Woch.*, October 21st, 1924, p. 1962) discusses the restriction and increase of fluids in the treatment of various diseases. The average amount of water required daily by an adult is, roughly, 3½ pints; one-half to two-thirds of this being taken as beverages, the rest as water in the food. In cardiac diseases with dropsy, and in cases of high blood pressure, especially those associated with nocturnal dyspnoea, restriction of the fluids taken is of service. In acute nephritis, and in some kinds of chronic nephritis, fluid restriction is also useful. In granular kidney, when the renal functions are only slightly affected, circulatory disturbances and dyspnoea may be prominent symptoms, and in such cases fluid restriction relieves the circulatory disturbances and high blood pressure. On the other hand, when uraemia threatens, abundance of fluid is necessary. In chronic nephritis, when dropsy is due to cardiac failure, as is frequently the case in granular kidney, fluid restriction is occasionally of service, but otherwise (especially in tubular nephritis) restriction of sodium chloride in the diet is of more importance. Restriction of fluid is useful in primary polydipsia, and in diabetes insipidus, combined with a suitable diet. Increase in the fluids taken prevents retention of metabolic products in certain cases of granular kidney, and the large quantities of fluid drunk in various spa treatments aid the excretion of uric acid in gout. Of greater importance is the abundant supply of fluid after haemorrhage, when fluids cannot be taken by mouth, or when elimination of toxins is necessary. Fluids may be introduced by the rectum, subcutaneously, or intravenously. The simplest form of administration is the drop enema—especially suitable when a continuous supply is desired. For rapid introduction of fluid intravenous injections are mostly used, normal saline and other fluids being employed, but the author prefers a 5.4 per cent. isotonic solution of grape sugar.

403. Vaccine Treatment of Rheumatism.

R. LAUTIER (*Bull. Soc. de Thér.*, October 8th, 1924, p. 249) states that vaccine therapy in rheumatism was first carried out by Rosenthal (1909–10) with a vaccine obtained from strains of Achalme's bacillus isolated from patients with rheumatism and containing 5 million bacilli per cubic centimetre. Rosenthal employed the vaccine in addition to treatment by a serum obtained from immunization of horses by injection of cultures of Achalme's bacillus. Serum treatment was reserved for the acute attack, and the vaccine was injected in the intervals between the attacks, with the object of preventing relapses or cardiac complications. Bertrand of Antwerp next tried a Wright's vaccine, also isolated from strains of Achalme's bacillus, but his method differed from Rosenthal's in the number of bacilli in each cubic centimetre of the vaccine and its mode of application. The vaccine was used during the attacks as well as in chronic rheumatism. The first dose consisted of 25 million bacilli, and each subsequent dose was increased by 25 million, the second being given twenty-four hours after the first in acute cases and forty-eight hours after the first in chronic cases. Lautier, who has employed Bertrand's method for the last two years, has found that it is superior to the ordinary treatment for rheumatism, and has never had any bad results from its use. An acute attack was usually cut short before more than 150 million bacilli had been given, while in chronic forms it was sometimes necessary to give larger doses, such as 250,375 million bacilli or more. The treatment should be continued even after clinical recovery, so as to prevent relapses. After the treatment has been completed one to four injections a year of a dose of 25 million bacilli are sufficient, especially in chronic rheumatism.

Diseases of Children.

404. Prognosis of Tuberculosis in the First Year of Life.

C. VAN DAM-STOKKINK (*Nederl. Tijdschr. v. Geneesk.*, September 13th, 1924, p. 1348), after a review of the literature, according to which the mortality from tuberculosis in the first year of life ranges from 67 to 85 per cent., states that he has collected 144 cases of tuberculosis in children of this age treated at the Emma Children's Hospital in Amsterdam. In most of the cases the diagnosis was established by bacteriological and clinical examination, but in some instances it was not made until the autopsy. The youngest child was only 18 days old. No evidence of tuberculosis was found in this case on clinical examination, but *post mortem* a tuberculous focus was found in the lung. The mortality among the 144 cases was 76 per cent. The youngest of the 35 survivors was 2 years, and the oldest 15½ years. The prognosis during the first six months was very unfavourable, as out of 40 children 36 died—a mortality of 90 per cent., while in the second half-year the mortality was 66 per cent. Of the 144 patients 95, or 87 per cent., died in the first year, 9 per cent. in the second, and 3 per cent. in the third year. No fatalities occurred after that period. Sex had no influence on the mortality, as among 133 children, of whom the sex was stated, the mortality was the same (73 per cent.) among 68 males and 65 females. The mortality was decidedly higher among the artificially fed than among breast-fed children, as is shown by the following figures. Among 43 children breast-fed longer than three months the mortality was 77 per cent., and among 29 children breast-fed only a short time 76 per cent., while among 24 children artificially fed it was 92 per cent. The source of infection was discovered in 81 cases: in 27 it was the father, in 28 the mother, in 3 both parents, in 12 a brother or sister, in 4 the grandfather or grandmother, and in 7 neighbouring families. According to Eliasberg, tuberculosis in the children of tuberculous families does not run such an unfavourable course as in children with a non-tuberculous environment. In the former the mortality is less, and in the fatal cases the disease has a longer course. Dam-Stokkink's experience was similar, as he found that the mortality of children of tuberculous families was 74 cent., as compared with a mortality of 81 per cent. among children of non-tuberculous families.

405. Vulvo-vaginitis in Children.

E. APERT (*Journ. de Méd. et de Chir. Prat.*, September 10th, 1924, p. 609) states that simple vulvo-vaginitis complicating measles, whooping-cough, febrile catarrh, or other acute febrile disorders of children yields readily to copious irrigation with warm normal saline solution which has been made slightly alkaline. When there is no such concomitant disease the presence in a child of a thick yellowish-green discharge which leaves a thick stain on the linen points to gonococcal vulvo-vaginitis, and the diagnosis is easily made by microscopical examination. In treatment local measures are of paramount importance, although exhibition of arsenic, lime, and iodine is useful. The child is placed flat on a couch with the hips flexed and abducted, and the external genitals are sponged with a 1 in 4,000 solution of potassium permanganate, the vagina being gently irrigated with the same solution through a soft india-rubber catheter (number 8 or 10). The container should not be placed more than 4½ inches above the vaginal orifice, since injections at higher pressure are liable to convey infection to the supravaginal regions of the genital tract. Urethral infection is rare in children, but if pus can be squeezed from the urethra a few drops of 2 per cent. protargol should be injected into it. During the first few days of treatment the patient should be kept in bed. Gonococcal peritonitis is a rare complication: it occurs with great acuteness, but clears up without necessitating surgical intervention. Gonorrhoeal arthritis is much less common than in the adult; sensitized vaccines have a place in treatment, and antigonococcic serum, if used, should be injected into the affected joint.

406. Causes and Treatment of Otitis Media.

OUT of 613 children admitted to an American hospital from February to August, 1923, no fewer than 33.4 per cent. had otitis media or developed it subsequently. The children came from poor homes and had been artificially fed. The incidence of the otitis varied with the season of the year (as in acute respiratory diseases), with the type of associated disease (pneumonia, dysentery, nasal diphtheria, pertussis, and pyelitis), and with the age, the susceptible period being 3 to 15 months. D. T. SMITH (*Amer. Journ. Dis. of Children*, July, 1924, p. 1) considers, therefore, that there is probably an associated vitamin deficiency, since the age-period and the seasonal variation correspond with those of rickets and scurvy, and the children had been artificially fed. Eighteen of the thirty cases of rickets had otitis media; rats deprived of fat-soluble vitamin A developed otitis media (Daniels, Armstrong, and Hulton, 1913). The causal organism was a haemolytic streptococcus in 50 per cent. of cases; other streptococci and staphylococci were frequent, while the pneumococcus, even in otitis associated with pneumonia, was surprisingly infrequent. Otitis may be contagious, and epidemics have been recorded. Smith then gives details of a new and satisfactory method of treatment. He points out the vital importance of clearing the pus from the external auditory meatus and introducing the antiseptic into the middle ear. A long clean incision is made into the posterior inferior quadrant of the tympanic membrane. The ear is then irrigated with half-strength peroxide solution by means of a medicine-dropper with a rubber bulb. Peroxide solution is chosen because it liquefies the pus and indicates the presence of more pus by frothing. The external ear is swabbed dry and an antiseptic dropped in from a clean dropper and washed to and fro. Ten to fifteen drops of a 0.5 per cent. solution of sodium-hydroxy-mercury-benzo-phenone sulphonate, freshly made from tablets, and repeated three or more times in the twenty-four hours according to the severity of the case, cleared up infections of the colon bacillus rapidly and improved streptococcal infections. The addition of 2 per cent. of acetic acid to the solution was found to make it effective for *B. pyocyaneus*. Gram-positive organisms were treated by giving alternate irrigations with gentian violet solution (up to 5 per cent.). By this method 80 cases of acute and chronic otitis media were cured in less than a fortnight from the onset. No case of mastoiditis followed the treatment.

Obstetrics and Gynaecology.

407. Medical Treatment of Salpingitis.

ACCORDING to A. SIREDAY and P. BROCQ (*Journ. de Méd. et de Chir. Prat.*, September 10th, 1924, p. 621), it is almost universally agreed that in cases uncomplicated by tubal rupture or torsion of an ovarian cyst, acute salpingitis—with severe pain, peritoneal reaction, and vomiting or nausea—yields to medical treatment. Complete rest in bed in a horizontal position is essential. The application to the hypogastrium of ice-bags may with advantage be associated with very gentle abdominal massage with a paste of collargol 77 grains, lanoline 3 drachms, and vaseline 4½ drachms each morning and evening. The ice-bags should be renewed every three hours. The authors find that morphine is usually required, but administration of antipyretics is without value and may be harmful. The copious and hot vaginal douches which were formerly given in many cases are injurious, for they interfere with the patient's repose, but gentle irrigations of 4 ounces of boiled water, at a temperature of 102° to 104° F., to which 25 drops of tincture of iodine have been added, may be made. At this stage cathartics are contraindicated. The treatment of subacute salpingitis—whether subacute from the beginning or the sequel of an acute stage—is similar, save that hypodermic administration of morphine may be replaced by rectal injections of 4 ounces of water containing 15 grains of antipyrin and 20 to 30 drops of laudanum. Heliotherapy is a valuable adjunct to treatment in the subacute stage: the first exposures should not last longer than ten minutes. In chronic salpingitis vaccine therapy and thermal cures play a useful part; in certain cases also benefit is gained from packing the vagina with a long band of gauze of which the upper end is impregnated with one part of ichthyol in ten of glycerin.

408. Hydatidiform Mole.

J. A. VAN DONGEN (*Nederl. Tijdschr. v. Geneesk.*, October 11th, 1924, p. 1824) in the course of seven years has seen 16 cases of hydatidiform mole among 4,000 cases of pregnancy, so that hydatidiform mole occurred once in every 250 pregnancies. This figure agrees with that given by Kroemer, who found 15 moles among 3,856 pregnancies. K. Mayer reported one case among 310 deliveries, Seitz estimated that one case of mole occurred in every 500 pregnancies, while Treub's estimate was 1 in 1,000, and van der Hoeven's 1 in 2,000. According to most writers hydatidiform mole is more frequent in older women than at an earlier period of life. Frey, Walther, and Stoppel have recorded cases at 51, 53, and 54 respectively. Gies, who reported 30 cases, found that hydatidiform mole was seven times as common in pregnant women over 40 as below that age. Seitz maintains that about 25 per cent. of the cases occurred between 40 and 50, and Walther declares that 16.5 per cent. of his cases were between 40 and 50, and 2.8 per cent. were still older. On the other hand, none of van Dongen's patients were elderly women. Only one, aged 42, was over 40, and only four

between 30 and 40. The youngest was aged 16, and there were six aged 18, 19, 20, 20, 21, and 22 respectively. Several writers have stated that hydatidiform mole is more frequent among multiparae than among primiparae. In van Dongen's series there were three primiparae and thirteen multiparae. The mole is usually expelled between the second and seventh month of pregnancy. Among van Dongen's patients pregnancy had lasted two months in one, two and a half months in two, three months in three, five months in three, four months in one, four and a half months in one, five months in three, five and a half months in one, and six months in one when the mole was expelled. In all the cases expulsion of the mole was preceded by more or less severe haemorrhage, in most cases for a long period, so that most of the patients were rather anaemic. In six cases, or 37.5 per cent., hyperemesis occurred. Albuminuria was present in seven cases, or 43.75 per cent., in two there was only a trace of albumin, in four it was somewhat greater, and in one it was 8 per 1,000. In six cases ovarian cysts were present, the size of the cysts ranging from that of a small hen's egg to that of a large orange. Only one patient died, and she was moribund from haemorrhage when admitted to hospital. In none of van Dongen's cases was the mole spontaneously expelled, but the uterus had to be emptied with a polypus forceps and curette, with or without previous dilatation of the cervix.

409. Childbirth and Venereal Disease.

ACCORDING to E. A. SCHUMANN (*Amer. Journ. Obstet. and Gynecol.*, September, 1924, p. 257) the frequency of gonorrhoea as a complication of pregnancy has been exaggerated: in a series of 150 private patients in whom routine bacteriological examination of a cervical smear was done the gonococcus was detected once only. For this reason, and also because it has been shown that the Fallopian tube is rarely a focus of chronic gonorrhoeal infection, he thinks it is probable that the gonococcus has little importance as an active agent in the production of puerperal sepsis. Extension of a gonorrhoeal cervicitis or urethritis to the endometrium and tubes during pregnancy is a common event: that the extension has occurred in pregnancy is proved by the finding that the tubes are occluded, and probably many cases of one-child sterility may find their explanation thus. Schumann recommends that if vulvalor cervical gonorrhoeal infection is manifested during gestation, treatment should be directed to localizing the disease, while avoiding any traumatism which might lead to its extension. The entire vagina and cervix should be gently coated with 20 per cent. argyrol solution at weekly intervals, while the patient should instil 2 to 4 oz. of a 10 per cent. solution into the vagina each day. The profuse irritating leucorrhoea which sometimes occurs responds to the free use of a powder containing equal parts of sodium bicarbonate and fuller's earth retained for forty-eight hours on a cotton tampon. With regard to syphilis the author infers from his own records that pregnancy in an untreated patient may be expected to lead to the birth of a living healthy infant in about one-half of the cases. This proportion is probably increased to over 70 per cent. if the patient is subjected to intensive treatment during gestation. If adequate treatment is given, the chances in subsequent pregnancies of the birth of a healthy infant are but little less than in non-syphilitic subjects.

Pathology.

410. The Wassermann Reaction in Leprosy.

R. B. LLOYD, E. MUIR, and R. G. C. MITRA (*Indian Journ. Med. Research*, July, 1924, p. 213) have examined the effects on the Wassermann reaction of treating leprosy cases with antisyphilitic remedies, with a view to determining the part played by coexisting syphilis in producing positive reactions. The percentage of positive reactions was lowest in the anaesthetic type of leprosy (27 per cent.), and in twelve out of sixteen positive cases the reaction was favourably influenced by treatment. The authors believe that the explanation of the lower incidence of the positive Wassermann reaction in nerve cases is to be found in the fact that the leprosy bacilli in the nerves are few in number, and but little production of antibodies is to be expected. They advise, therefore, that in all cases of nerve leprosy the Wassermann test should be performed before treatment is commenced, since if the reaction is negative, as it will be in 75 per cent. of the cases, no antisyphilitic treatment will be required. If the reaction is positive, however, and particularly if there are indications that the case has been of the primary nerve type from the first, they recommend a course of antisyphilitic treatment, even in the absence of a specific history, antileprotic treatment being commenced subsequently. In skin cases the authors find that a positive reaction was favourably influenced by antisyphilitic treatment in more than half the cases, and in about one-third of them it became negative. They conclude that coincident syphilitic infection, though possibly not the only cause of the Wassermann reaction, is a potent factor in both types of leprosy. In a former paper (*Indian Journ. Med. Research*, July, 1923) the authors had described their study of two series of children of leper parents, living under similar conditions in the same place, totalling 104 individuals; of these, 58 became infected with leprosy, 62 per cent. presenting positive Wassermann reactions. The remaining 46 children did not develop leprosy and their Wassermann positive rate was only 17 per cent. The authors express the opinion that the high proportion of positive reactions in these leper children cannot be attributed to syphilis.

411. The Diagnostic Value of Lumbar Puncture in Late Syphilis.

J. LOFTHUS (*Norsk Mag. f. Laegevidenskaben*, September, 1924, p. 705) has compared the Wassermann examination of the serum and cerebro-spinal fluid with the numerous other tests, including cell counting, of the cerebro-spinal fluid in several cases of late syphilitic lesions, such as general paralysis and tabes. Among the tests of the cerebro-spinal fluid were those associated with the names of Nonne, Apelt, Pandy, Weichbrodt, and others. In some cases the cerebro-spinal fluid gave a negative Wassermann reaction, although the other reactions were positive. Thus, of 90 patients suffering from general paralysis, only 73 gave a positive Wassermann reaction in the cerebro-spinal fluid. The serums of 70 patients suffering from general paralysis gave a definitely positive Wassermann reaction in 49 cases only, yet there could be no doubt as to the correctness of the diagnosis founded on the clinical evidence and the examination of the cerebro-spinal fluid by cell counting and other tests. The author concludes from his observations that it is unjustifiable to discard the diagnosis of general paralysis simply because the Wassermann reaction is negative both in the cerebro-spinal fluid and in the serum. A diagnosis of general paralysis founded on a careful clinical examination and the demonstration of morbid reactions in the cerebro-spinal fluid, other than the Wassermann reaction, is perfectly justifiable whatever the nature of the Wassermann reaction.

412. Basal Metabolism of Fat.

E. O. FOLKMAR (*Ugeskrift for Laeger*, October 9th, 1924, p. 762) has investigated the basal metabolism of 21 women, 10 of whom were suffering from adiposity alone, while the remainder were suffering also from well defined adiposalgia. In no case was there evidence of advanced cardiac insufficiency or of catarrh of the respiratory tract. In every case the basal metabolism was found to be reduced, the reduction varying from 3 to 20 per cent. These findings doubtless represented an underestimate of the reduction of the basal metabolism, for the conditions under which the investigations were carried out were not ideal, the patients' pulses often being faster than usual at the time of the examination. No relationship was established between the degree of reduction of the basal metabolism and the age and weight of the patients. With regard to treatment in these cases, the author has controlled the influence of various thyroid preparations by means of concurrent basal metabolism examinations, and, with the exception of only one preparation, which was Danish, he found that the various thyroid preparations on the market were either inert or very variable in their action. Only on one occasion did he have to discontinue thyroid medication for a short time on account of the palpitation of the heart provoked. Generally speaking, he regards the processes leading to adiposity as representing a vicious circle requiring intervention by such means as reducing the dietary and carefully training the patient's muscles to enable her to take more exercise.

413. The Spleen in Diseases of the Blood.

W. J. MAYO (*Journ. Amer. Med. Assoc.*, September 13th, 1924, p. 815) discusses certain blood conditions depending on pathological processes in the spleen, and concludes that in the light of clinical experience a chronically enlarged spleen must be regarded as a menace to the well-being of its human carrier, and that it rests with the physician to show why it should not be removed. He refers to 255 cases of splenectomy performed in the Mayo clinic for splenic anaemia, haemolytic icterus, pernicious anaemia, splenomedullary leukaemia, polycythaemia, and purpura. In all these diseases Mayo discusses the relationship of the spleen to the blood condition, and lays emphasis on its connexion with pathological changes in the white cells.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

414. Etiology of Enuresis.

S. AMBERG (*Journ. Amer. Med. Assoc.*, October 25th, 1924, p. 1300) attacks the prevalent conception of enuresis—namely, that it is of purely psychogenic origin. He admits that there may be an underlying neuropathic or psychopathic condition, of which enuresis is one of the symptoms, but he points out that Trömmer could not detect any neuropathic factor in 28 per cent. of his cases. The success of treatment by suggestion has been frequently put forward as proof of a psychogenic origin, but Amberg supports Pfister in deprecating this argument, since symptoms of organic diseases may also be favourably influenced by suggestion. Amberg maintains that whatever may be the origin of enuresis, it involves a deviation from normal micturition, an interference with some part of the mechanism. He gives a description of the factors normally concerned in the process, and insists on the need of further investigation. In the treatment of each case it is important to determine the exact point where interference takes place with the normal mechanism. As the result of experimental investigation Amberg found that although in some cases the desire for urination coincided closely with the onset of contractions of the bladder, yet in others this desire was felt considerably later. In several instances it was associated, moreover, with a decrease in the pressure in the bladder, followed immediately by a contraction. He adds that the occurrence of this decrease in pressure does not fit in with any of the accepted theories of micturition. He maintains that the value of suggestion in treatment is overestimated, and that purely educational measures should preferably be emphasized. He does not think the degree of concentration of the urine is a factor in the condition if the bladder walls are healthy. He regards the value of atropine treatment as further evidence of enuresis being due to other than psychogenic causes.

415. Diphtheria among Immunized Children.

R. P. FORBES and B. GREEN (*Arch. of Ped.*, September, 1924, p. 631) record an epidemic of diphtheria which occurred in an immunized group of children at the Denver Orphans' Home. Among 135 children, aged from 6 months to 15 years, all of whom had received three injections of antitoxin, eleven developed diphtheria; two of these, however, were extremely doubtful cases, and there were no deaths or complications. The authors maintain that it is not a safe or economical procedure to omit the Schick test after administration of toxin-antitoxin. Fifteen cases, or 16.8 per cent. of those immunized six months or more before the epidemic, were Schick-positive—this high percentage being possibly due to faulty technique in the performance or reading of the test or to poor toxin-antitoxin. The possibility of Schick-negative individuals developing diphtheria must also be borne in mind. Of the authors' eleven cases, six were Schick-negative, but only three of these were typical of pharyngeal diphtheria, and one received no antitoxin. A group of five children presented both positive Schick tests and positive throat cultures, but did not develop clinical diphtheria. All the typical clinical cases and forty-three (67 per cent.) of the contacts with positive cultures still had their tonsils. There was no evidence that immunization increased the liability to the carrier state. The authors add that without immunization there would undoubtedly have been a higher incidence of diphtheria. Removal of tonsils and adenoids, and isolation into small groups, proved the most effective means of cutting short the epidemic.

416. Serum Reaction in the Pleura.

J. SABRAZÈS (*Gaz. hebd. des sci. méd. de Bordeaux*, September 14th, 1924, p. 580) states that serum reactions of the serous membranes are more frequent than is generally supposed, but require looking for. A pleural effusion, for example, may be so slight that it can only be detected by exploratory puncture. Sabrazès reports the case of a girl, aged 20, who eight days after the injection of 210 c.cm. of antitoxin for diphtheria developed a pleural effusion simultaneously with serum urticaria, pains in the joints, and adenitis. The pleural effusion presented the following characters: it rapidly cleared up after three punctures; there was only a slight fibrin content; the Rivalta reaction was positive; and the cytological formula was characterized by lymphocytosis, and the presence of neutrophil polymorphonuclears and macrophage and plasma cells.

417. Herz's Sign.

C. CURUPI (*Cuore e Circolazione*, September, 1924, p. 353) has tested the value of Herz's sign for cardiac insufficiency in 52 cases. As regards the technique the subjects were always kept in the supine position for at least ten minutes before the experiment, so as to exclude the influence that repeated change of position might have on the number of cardiac pulsations; the movement of the arm was then carried out slowly so as to reduce the muscular work as far as possible. In 29 more or less neurasthenic individuals the results were negative: not only was there no diminution, but there was not even an increase in the number of pulsations, although the experiment was repeated. The sign was also absent in 10 other cases, 5 of which showed a diminution in the number of cardiac pulsations ranging from 1 to 9, and 5 a diminution of only 2 or 3. In the remaining 13 cases there was a diminution of more than 5 beats (6 to 15). The sign was negative in cases of obvious myocardial change, while it was present in cases without any appreciable affection of the myocardium. Curupi comes to the conclusion that Herz's sign is neither characteristic nor constant in myocardial degeneration, and therefore possesses little clinical value.

418. Benign Meningitis.

Y. USTVEDT (*Tidsskrift f.d. Norske Laegeforening*, October 1st, 1924, p. 877) has, since 1917, treated 205 cases of acute meningitis, 55 of which were epidemic cerebro-spinal meningitis. There were also 88 cases of tuberculous meningitis, all fatal, among these 205 cases. Further, there were 33 cases of acute meningitis in which bacteria and pus were found in the cerebro-spinal fluid; all these cases terminated fatally. Finally, there were 29 cases classed as serous or benign meningitis, only 2 of which proved fatal. In this group there were 9 men, 4 women, 8 boys, and 8 girls. The diagnosis of meningitis was undoubtedly correct, in view of the clinical evidence and the results of lumbar puncture. No organisms were recovered, however, from the cerebro-spinal fluid, and the Wassermann reaction was always negative. The onset of the disease was acute, with high fever, and with severe opisthotonos in many cases. The onset was occasionally more insidious, resembling that of tuberculous meningitis; but, though guinea-pigs were inoculated when sufficient cerebro-spinal fluid was available, tubercle bacilli were never detected. In two cases this benign meningitis developed as a sequel to mumps; in another case a positive Widal reaction was obtained three weeks later. The author discusses, and does not dismiss as improbable, the possibility of some at least of these cases being due to abortive epidemic encephalitis, and in two of his cases the "benign" meningitis left symptoms similar to those following a typical attack of epidemic encephalitis. Whatever the etiology of this serous meningitis, the prognosis seems to be good, and he adds that lumbar puncture is often of great therapeutic as well as diagnostic value.

Surgery.

419. Surgical Treatment of Gall Stones.

A. KROGIUS (*Finska Läkaresällskapets Handlingar*, July-August, 1924, p. 507) reviews his experience in hospital practice of 167 cases of gall stones treated by cholecystectomy since 1905. Only 18 of these patients were males. There were only 16 deaths in connexion with the operation—an operation mortality of 9.5 per cent. A classification of the cases, according as they were or were not complicated by jaundice, emphasized the sinister significance of this complication. Among the 113 cases uncomplicated by jaundice there were only 3 cases terminating fatally in connexion with the operation, but there were as many as 23 post-operative deaths among the 54 cases complicated by jaundice. The operation mortality was thus 2.6 and 24 per cent. respectively. Information was obtained about the fate of 103 patients who had been operated on in the period 1905–22. It was found that 71 had remained free from symptoms since the operation, 15 had had slight attacks of pain without jaundice, 11 had had somewhat more severe attacks, also without jaundice, and only 4 had had genuine recurrences of biliary colic with jaundice. Two patients had died after a second operation for the same disease. Basing his conclusions on his experience with these cases, the author gives the following advice. When an attack of biliary colic is acute and dangerous complications are anticipated it is

well to operate early, even though there has been no previous attack, the best course to adopt being that usually taken in cases of severe acute appendicitis. When there have been several attacks, and particularly when there have been signs of inflammation associated with these attacks, it is well to operate in a free interval if the patient is young and strong. The same advice applies to distension of the gall bladder, and signs of obstructive jaundice are an indication for early operation. Great care and discrimination should be exercised in balancing the indications for operation on the biliary tract against such factors as old age and debility, which militate against recovery from an operation.

420. Carcinoma of the Colon.

D. F. JONES and E. P. HAYDEN (*Boston Med. and Surg. Journ.*, September 11th, 1924, p. 471) state that during 1918 there were 90,000 deaths from cancer in the United States, and that more than 10 per cent. of these were due to carcinoma of the intestines; they urge, therefore, that greater efforts should be made to obtain an early diagnosis. Symptoms of obstruction are those most often recognized, but obstruction occurs late in the course of the disease. The early symptoms are simply those of slight irritation; thus the action of the bowels is slightly irregular, there is some excess of flatus, and occasional traces of blood may be found in the stools. Pain is an uncertain sign, since many patients admit only discomfort; this, when present, is always below the umbilicus, often in the right lower quadrant, and due to the presence of flatus in the caecum. This may lead to a diagnosis of chronic appendicitis. In differential diagnosis a number of conditions must be considered, but whenever symptoms suggestive of carcinoma of the colon are present every possible diagnostic method should be employed; even then positive diagnosis is sometimes impossible. *X*-ray diagnosis of carcinoma of the colon is often misleading, according to the authors, who prefer the barium enema to the barium meal in these cases, since the latter may render a partial obstruction complete. They agree that *x*-ray examination of the intestinal tract is of great value, but think that this evidence alone should not be allowed to weigh too heavily in the final diagnosis. No single symptom nor single examination is of any particular value; it is only by taking every symptom, and the result of every possible examination, that sufficient evidence is obtained for diagnosis, or to warrant exploratory operation. The authors consider that earlier diagnosis is possible in many more cases, and that in those cases in which marked improvement follows the colostomy this should be followed more often by removal of the growth.

421. Tannin Solution for Disinfection of the Hands.

W. L. POKOTILO (*Zentralbl. f. Chir.*, September 6th, 1924, p. 1969) of Odessa states that as long ago as 1910 he had used a 5 per cent. tincture of tannin for disinfection of the hands, but when spirit became expensive and scanty he had to abandon the method. He then investigated the action of a 5 per cent. watery solution of tannin, and found that the results were as good as with the tincture. The hands were first washed in tap water with a brush and soap and then rubbed over with a swab soaked in the tannin solution. Bacteriological examination showed that cultures from hands so treated were sterile, whereas numerous colonies were grown from hands that had been washed with soap and water only for ten to fifteen minutes. The tannin solution, which is rubbed on the hands, acts as a fine coating, and prevents the bacteria penetrating the skin. In other words, the tannin solution plays the part of a glove, but is superior to it in that the sensation of touch is not impaired and the hands do not slip so readily; whilst, what is most important, the process is much cheaper. The only drawback of the tannin solution is that if care be not taken it leaves grey stains on linen, but these can be removed by oxalic acid.

422. Multiple Lesions in Surgical Tuberculosis.

N. PAUS (*Norsk Mag. f. Laegevidenskaben*, September, 1924, p. 764) has conducted investigations which show that in most cases of surgical tuberculosis, kept under observation for a considerable time, more than one tuberculous lesion appears. He re-examined 353 patients who had been previously treated in his hospital for tuberculosis of the bones and joints. In as many as 213, or 60.3 per cent., of these cases he succeeded in demonstrating other tuberculous foci than those for which treatment had been given. In 50 cases of surgical tuberculosis he kept the patients under constant supervision for five years, examining them from month to month. During this period he found that in more than two-thirds of these cases multiple tuberculous foci appeared. He regards this finding as an underestimate, as there were probably many cases in which tuberculous foci existed without being clinically demonstrable. As many as 129, or 36.5 per cent. of the 353 patients suffering from surgical tuberculosis, died within a few years of discharge from hospital. The lesson of these figures is, in his opinion, that surgical tuberculosis should be regarded as a general infection and not as a morbid condition confined to a joint or bone.

Therapeutics.

423. Bismuth Treatment of Syphilis.

R. STREMPEL (*Dermat. Woch.*, October 11th, 1924, p. 1205) reviews the literature, and records his observations on 56 cases treated by bismuth alone or in combination with salvarsan at the Bonn University Skin Clinic. His conclusions are as follows: The results of the bismuth treatment of syphilis are the more successful the earlier the patient comes under observation. The older the disease the less likely is it to respond to treatment. While in early primary syphilis with a negative Wassermann reaction, one series of combined injections is sufficient, two series with an interval of five to six weeks between each are required in primary syphilis in which the Wassermann reaction is positive. In recent secondary syphilis a third cure is needed after two or three months. Large single doses at short intervals and a sufficiently large total dose in each series of treatment are of importance. As a rule relapses can be avoided in this way, and the spread of syphilis can be checked by prevention of contagious manifestations. Strempel's cases are too few in number to allow him to judge as to the value of pure bismuth treatment in early syphilis. How far salvarsan can be replaced by bismuth must be decided by consideration of each individual case. Strempel is unable to confirm the extraordinarily favourable results obtained by Citron as regards the changes in the Wassermann reaction and the cerebro-spinal fluid in advanced syphilis.

424. X-ray Treatment of Whooping-cough.

H. I. BOWDITCH, R. D. LEONARD, and L. W. SMITH (*Amer. Journ. Dis. of Children*, September, 1924, p. 323) claim that Roentgen rays in the treatment of whooping-cough give better results than any other method of treatment. Twenty uncomplicated cases of whooping-cough, 18 of which were in children under 3, were treated. A rapid reduction in the number and severity of the paroxysms followed, and, parallel with this, a fall in the lymphocytosis occurred, replacing the usual maximum in the third week. *B. pertussis* was recovered from 30 per cent. of the cases which were in or under the third week of disease; cultures from older cases were sterile. Three cases complicated by pneumonia were similarly treated by Roentgen rays, and the same relief from paroxysms followed, thus conserving the babies' strength. In these cases the rays were successfully combined with treatment by diathermy, as advocated by Kleinsmidt in Germany.

425. Treatment of Malignant Pustule.

B. PERICIC (*Lyèc. Viesnik*, No. 46, 1924) deprecates the treatment of external malignant pustule (anthrax) by excision, cautery, or serum. As the result of his experience of 91 cases during eighteen years he advocates fomentations several times a day with liquor Burowii (a 10 per cent. solution of alum and lead acetate) and the internal administration every two hours of 1 minim of tincture of iodine in water until the oedema disappears, with quinine during the febrile period. Such treatment is painless, and it is claimed that it is as successful as treatment by excision, cautery, or serum. In 16 cases examination of the haemorrhagic vesicles for *B. anthracis* was positive. Prophylaxis consists in burning or deep burial of infected carcasses; in forbidding the sale of infected meat, and boiling all suspected meat and milk; in disinfection of skin, wool, etc., used industrially, and of all infected places with 10 per cent. chlorinated lime or 5 per cent. carbolic acid; and in vaccination of cattle exposed to infection with a specific serum.

426. Theobromin Sodium Salicylate (Diuretin) in Hydrocephalus.

OBSERVING the effect of diuretin on oedema, W. MCKIM MARRIOTT (*Amer. Journ. Dis. of Children*, October, 1924, p. 479) deduced that an analogous absorption of cerebro-spinal fluid from the subarachnoid spaces into the blood would take place. He therefore treated six hydrocephalic infants with diuretin (up to 0.2 gram t.d.s.) and obtained excellent results in the communicating type of hydrocephalus. No benefit was obtained in two cases with complete obstruction of the ventricle. No ill effects were observed other than a temporary condition resembling sclerema in one case. Marriott urges that this treatment be given a trial before recourse to the more dangerous surgical procedures.

Laryngology and Otology.

427. Nystagmus provoked by Movements of the Head.

L. BALDENWECK (*Arch. Internat. de Laryngol., Otol. et Rhinol.*, September–October, 1924, p. 893) points out that nystagmus and vertigo are not inseparable, and that the former can occur without the latter. Bárány showed that quick movements of the head produce a moderate degree of nystagmus which only lasts for a few seconds; when the experiment was repeated three or four times no further response was obtained owing to "adaptation of the nervous centres." If, however, the head is moved slowly to one or other side in the frontal plane—that is, inclined to one or other shoulder—a nystagmus may be set up which is either rotatory to the same side or horizontal to the opposite side. One type of this nystagmus is quickly transitory, but another type persists so long as the head is kept in the inclined position. Researches show that the quick movements excite the semicircular canal system, whilst the slow movements excite the otolith apparatus. The otolith apparatus consists of two otoliths on either side—one in the saccule (the "sagitta") and one in the utricle (the "lapillus"). The sagittae are disposed in a plane almost perpendicular to the axis of the petrous bone, and the lapilli lie in a plane perpendicular to the sagittae. These otoliths exert considerable influence on the muscular tone of the body. In the decerebrate animal they dispose the limbs in a particular position for any given position of the head. The sagittae control the movements in the frontal plane and the lapilli those in the sagittal plane. When the head is inclined to one side the pressure of the otolith on the hair processes of one macula acustica is temporarily reduced and on the other side is increased for a short time. Thus the equilibrium is interrupted and, if the compensation of the higher centres is not acting, certain phenomena are caused, one of which is ocular nystagmus. In estimating the results of such movements of the head it must be remembered that the semicircular canal system is also excited, and that certain movements of the eyes may be produced by stimuli from the cervical muscles, as when the head is immobilized and the trunk moved on the head. The latter stimuli may be eliminated by immobilizing the head on the trunk and inclining the whole body. In slow movements the action of the semicircular canals is extremely small. Thus in a case of vertigo inclination over to the right shoulder produced no signs, but after twenty degrees of inclination to the left there was a powerful contraction of the neck muscles, preventing further inclination, a bilateral nystagmus which persisted until the head was returned to the erect position, and a marked vertigo.

428. The "Centrifugal Pressure" Test in the Differentiation of Chronic Deafness.

VAQUIER of Toulouse (*Rev. de Laryngol., Otol. et Rhinol.*, September 15th, 1924, p. 571) discusses the diagnosis between a hypo-acousis due to catarrhal processes and the deafness due to oto-sclerosis, in which there is respectively a fibrous or a bony ankylosis of the footpiece of the stapes. For a very long time the test of Gellé has been recognized as the classical diagnostic procedure, and in its performance a centripetal force is used to demonstrate the mobility or otherwise of the stapes. M. Escat has evolved another test on similar lines in which a centrifugal pressure of air is employed. In Gellé's test the drum is forced inwards by compression of the air in the external meatus, and the stapes is pressed inwards if still mobile. In Escat's test a vibrating tuning-fork is held close to the ear and Valsalva's experiment is quickly performed. Air under pressure enters the tympanic cleft, and the tympanic membrane is forced outwards, carrying with it the chain of ossicles. In the normal state of the stapes this bone is also drawn outwards, with a consequent breaking of the inertia of the endolymph and a diminution of the perception of sound. In such a case the result is said to be positive. When, however, the footpiece of the stapes is fixed there will be no movement on inflation and consequently no weakening of sound perception. This result is said to be negative, and is a valuable sign of oto-sclerosis. The test is easy to perform, and only requires a tuning-fork. Positive results were obtained in 100 cases of normal hearing, in 28 cases of nerve deafness, and 30 cases of catarrhal deafness. In 78 out of 81 cases of proved oto-sclerosis a negative result was obtained. This test is only practicable if the Eustachian tube is known to be quite free.

429. The Sphenoidal Sinus and the Optic Nerve.

W. S. SYME (*Journ. of Laryngol. and Otol.*, July, 1924, p. 375) describes the relations of the sphenoidal sinuses to the optic nerves. He states that though the sinuses are rarely of equal size, it is only in 3 per cent. of cases that the sinus of one side is so large as to stretch across and to come into relation with the optic foramen of the other side. In about 10 per cent. of cases, however, one sinus is in relation with both carotid tracts. Usually there is a firm plate of bone between the sinus and the nerve, but in some it is very thin, and cases have been described where it is absent. Sometimes it is a spheno-ethmoidal or a posterior ethmoidal cell that is in relation most closely with the optic nerve. In the walls and roof of the sphenoidal sinus are very small foramina, which contain a small strand of fibrous tissue, and frequently a small vein which connects with the extradural space and the endocranial periosteum. In a few cases there are definite fissures leading from the sinus to the optic foramen. The author discusses the various modes of transference of infection or inflammation from the sinus to the nerve. Toxaemia, he agrees, sometimes gives rise to optic neuritis, and does so also in the case of suppuration in the other sinuses and in cases of throat suppuration. The easiest way for propagation of the infection is directly through the thin bone or by the strands of fibrous tissue or the small veins described. Contralateral optic neuritis is only very rarely brought about by the actual contact of the sinus and nerve of opposite sides, but by the apposition of the carotid tract and the sinus of the two sides infection is carried along the carotid vessel. In the same way the abducens nerve may be affected, and cases where the optic or abducens nerve has been affected following middle-ear suppuration are probably due to the same mode of transmission. Another possible route of infection is directly into the arachnoid space, through the bone or small foramina, and thus to the nerves. There is still another theory—that retrobulbar neuritis is in quite a number of cases associated with disseminated sclerosis where no other cause of neuritis can be found, and the author suggests that the organism of disseminated sclerosis when found will probably prove to have a special affinity for the sphenoidal sinus. Finally, the diagnosis is not easy, and the examination of the sphenoidal sinus is a matter of some difficulty. *X* rays are of great value, but in many cases are not definitely diagnostic. The clinical signs — aching at the back of the head, pus appearing in the region of the ostium, etc.—are frequently absent, and optic neuritis is often the only sign of sphenoidal suppuration.

Obstetrics and Gynaecology.

430. Biological Tests for Pregnancy.

N. ZOPPI (*Rivista d'Ostetricia e Ginecologia Pratica*, September, 1924, p. 445) describes the various biological tests which have been proposed for the detection of pregnancy. Abderhalden's test, he remarks, has been proved to be unreliable. Accelerated sedimentation of erythrocytes, as described by Fahreus and Linzenmeier, although constantly present at certain stages of pregnancy, cannot be detected until after the third month; it occurs also in inflammatory conditions, especially those located in the pelvis. The phloridzin test gives positive results in the earliest months, but is of diminishing significance from the fifth month to term; a negative result is of greater diagnostic importance than a positive. Costa has recently described a test as follows. Three drops of blood serum are mixed with 1.5 c.cm. of 2 per cent. solution of novocain in physiological salt solution and three drops of 5 per cent. sodium citrate solution. The globulin having been precipitated, a drop of pure formaldehyde is added. A positive result is indicated by the appearance, within three to fifteen minutes, of a milky ring at the bottom of the test tube. Zoppi finds this reaction to be negative up to, and positive after, the end of the second month of pregnancy in healthy subjects. He adds that it persists until the twentieth day post partum—a fact which he thinks may prove to be of medico-legal utility. In inflammatory conditions of the uterus and adnexa—ante- and post-partum—Costa's reaction is said to be negative.

431. Menstruation.

S. E. KARK (*South African Med. Record*, October 11th, 1924, p. 440) develops his evolutionary view of the etiology and significance of menstruation. He remarks that placental reproduction, being the most recent modification in the general process of evolution, may be expected to display imperfections and instability, since functions or organs undergoing evolutionary changes are characterized by variability. The parallelism between labour and the onset of menstruation, both being controlled by the same mechanism, and the similarity of the regenerative processes and changes which the whole female organism undergoes in both conditions, point, he thinks, to both processes being homologous, and physiologically and functionally equivalent. The complete menstrual cycle epitomizes thus a former complete reproductive cycle occupying from three to four weeks. In tracing the successive evolutionary changes in sexual repro-

duction through external and internal fertilization, and aplacental, early, and complete placental gestation, each advance in function is seen to be accompanied by corresponding structural and morphological changes. These changes explain the mechanism of periodicity, the ovary being responsible in the first stage, the external genitals in the second, and the placenta in the final stage. With the aid of this evolutionary hypothesis Kark claims that the origin, periodicity, and the various manifestations of menstruation can be explained.

432. Etiology of Membranous Dysmenorrhoea.

R. D. SPENCER (*Journ. Amer. Med. Assoc.*, November 1st, 1924, p. 1428) calls attention to the obscurity surrounding the etiology of membranous dysmenorrhoea, which disease has been found as a complication of certain pelvic conditions, and also as a sequel to some of the exanthemata. He remarks that marked nutritive changes seem to be closely concerned in its production, and he describes a case in which it was definitely associated with a metabolic disease. His patient, a woman aged 40, came for treatment on account of the passage of endometrial casts at menstrual periods. There was no other menstrual irregularity, but she complained of considerable loss of weight and of frequent urgent micturition. The sugar content of the blood was found to be 0.25 mg. per cent., and the urine also contained sugar. Dietary treatment resulted in the disappearance of the sugar, and since then she has had no menstrual trouble. In this case Spencer remarks that diabetes mellitus was obviously an important factor in the production of membranous dysmenorrhoea.

433. Recurrent Toxaemia of Pregnancy.

F. S. KELLOGG (*Amer. Journ. Obstet. and Gynecol.*, September, 1924, p. 312) discusses the prognosis in cases of pregnancy with nephropathy and toxaemia, and alludes to the great difficulties that exist in distinguishing between chronic nephritis complicating pregnancy and a pregnancy toxaemia. He states that it is more usual than is commonly believed for patients with chronic nephritis to develop convulsions during pregnancy, and points specially to a numerous class of cases in which the patients, though showing no obvious clinical manifestations of chronic nephritis when not pregnant, suffer nevertheless in all, or the majority, of their pregnancies from kidney insufficiency, with or without toxaemic manifestations. To this group he gives the name "recurrent toxaemia of pregnancy": forty cases have been studied with the aid of ophthalmoscopic and renal sufficiency tests. In the treatment of these cases importance is laid on (1) careful and restricted dieting; (2) absolute freedom from fatigue, every form of exercise, save moderate walking, being prohibited; (3) freedom from worry and care; (4) the most careful avoidance of exposure to wet and cold—this being the most important. With the aid of such measures a certain number of patients whose former pregnancies have been accompanied by grave toxaemic conditions are able to keep well and have a healthy child. In most cases of chronic nephritis accompanying pregnancy the author thinks that the prognosis for the child is bad and that each successive pregnancy induces further and lasting damage to the kidney.

Pathology.

434. Tetania Parathyreopriva and Idiopathic Tetany.

NOËL PATON (*Edin. Med. Journ.*, October, 1924, p. 541) gives an extensive review of the recent investigations into the etiology of tetania parathyreopriva and idiopathic tetany. He brought forward in 1916 very strong evidence that these conditions are of the nature of toxaemias due to excess of guanidine, or more probably of methyl-guanidines, in the blood; but though this hypothesis has been generally accepted a considerable number of points still remain obscure. The old idea that the symptoms of parathyroid tetany are due to a deficiency of calcium—a deficiency which has been amply confirmed—has been disproved by the demonstration that they can be made to disappear by bleeding and transfusing an amount of saline equivalent to the blood removed—a procedure which necessarily dilutes still further the calcium in the blood. On the other hand, it has been shown that the injection of methyl-guanidine stimulates the efferent neurons of the spinal cord, and in a moderate dose increases the excitability of the neuro-myons. This increase in muscular tone is similar to that which generally follows the removal of the parathyroids. It is therefore conceivable that the methyl compounds of guanidine may play a part in the maintenance of muscular tone. Since these substances are increased in the blood and urine after parathyroidectomy, and in the urine in idiopathic tetany, the suggestion is valid that their metabolism is controlled by the parathyroids, and that it is through them that muscular tone is regulated. How the parathyroids act is unknown, but it seems probable to Paton that they control the metabolism of the methyl-guanidines. The source of the increased guanidine in tetany is supposed to be the choline fraction of the lecithin molecule, for there is evidence to show that the choline content of the blood is increased in tetania parathyreopriva, and that di-dimethyl-guanidine may be formed from choline. There is further evidence that the precursors of the methyl-guanidines are endogenous, though it is possible that they may be absorbed from the intestine.

435. Parathyroid and Calcium Treatment of Tuberculous Guinea-pigs.

P. S. PELOUZE and R. C. ROSENBERGER (*Amer. Journ. Med. Sci.*, October, 1924, p. 546), after considering the work of other investigators of the calcium metabolism in tuberculous persons, formulated a provisional hypothesis, according to which the alleged inability of the system to utilize calcium was due to a condition of hypoparathyroidism. It is known that the parathyroid glands are concerned in the metabolism of calcium in the body, and it was thought that diminished activity of these glands might in some way prevent its proper absorption. To ascertain whether there was any truth in this view seven guinea-pigs were placed in separate cages; they were allowed as much food as they wished, and not until they showed a steady gain in weight did experiments start. Four were then injected intraperitoneally with a comparatively avirulent culture of tubercle bacilli. Of these the first was kept as a tuberculosis control; the second was given 1 grain of calcium lactate daily; the third 1/80 grain of parathyroid substance; and the fourth 1 grain of calcium lactate and 1/80 grain of parathyroid. The remaining three (non-tuberculous) animals were fed—one on calcium, another on parathyroid, and the third on both. The animals were carefully weighed and the increases charted at the close of the experiment, three and a half months later. With the exception of the tuberculosis control it was noticed that the tuberculous animals ate more food than the normals, and that the tuberculous animal fed on both preparations ate more than any of the others. Correspondingly each of the medicated tuberculous guinea-pigs gained more in weight than its control non-tuberculous fellow. The four tuberculous animals were killed at the close of the experiment, and while severe lesions were found in the non-medicated control, in the other three the lesions were comparatively slight. The experiment was repeated with much the same results. Two further experiments failed, one owing to the appearance of epidemic diarrhoea amongst the animals, the other owing to the inoculation of too large a dose of tubercle bacilli. Though not drawing any definite conclusions from this work the authors consider that the results are suggestive, and express the hope that the work may be repeated with human patients.

436. Splenomegaly with Hyperleucocytosis.

M. E. ALEXANDER (*Journ. of Lab. and Clin. Med.*, September, 1924, p. 803) reports an unusual case of splenomegaly followed by marked and persistent alterations in the composition of the blood. The patient, a shoemaker, aged 45, suffered from splenomegaly associated with definite anaemia, the blood count being recorded as normal. Splenectomy was performed in 1914. He returned to work after a few months and did not appear at hospital again till 1919, when he was admitted in a state of extreme weakness. He was then found to have an enlarged liver, but no enlargement of the lymph glands. A blood count showed 1,240,000 red cells per cubic millimetre, haemoglobin 18 per cent., white corpuscles 150,200, with a differential count of 59.5 per cent. polymorphs, 11 per cent. lymphocytes, 24.5 per cent. eosinophils, 3 per cent. transitionals, and 2 per cent. myelocytes; nucleated red cells 56,325 per cubic millimetre. The patient remained under observation for twenty-three months, being treated by various drugs; his condition varied from time to time, and both red and white cell counts exhibited noticeable fluctuations. In 1921 he was readmitted suffering from bronchopneumonia and died in four days. At the necropsy the liver was found to be large and firm, the glands not enlarged, and the bone marrow yellowish; an accessory spleen was present. On histological examination cellular infiltration, mostly with neutrophils and eosinophils, was found in the lymph glands, the liver, the bone marrow, the accessory spleen, and to a less extent in the lungs. The spleen, which had been removed in 1914, and which had fortunately been preserved, was found to be firm and homogeneous in appearance; areas of perisplenitis were visible, and microscopic examination showed cellular infiltration with neutrophils and eosinophils, and proliferation of the fibrous connective tissue. The case is reviewed critically, together with similar ones reported in the literature, and the author reaches the conclusion that it must be regarded as an atypical form of myelogenous leukaemia.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

437. Chronic Arthritis.

D. W. CARMALT-JONES (*New Zealand Med. Journ.*, October, 1924, p. 397) discusses the classification and treatment of chronic arthritis from the etiological standpoint—namely: (1) Arthritis of determined etiology, (*a*) metabolic toxaemia, gout; (*b*) infection, tuberculous, gonococcal, and streptococcal; and (*c*) traumatic. (2) Arthritis of doubtful etiology considered anatomically and embryologically, (*d*) fibrositis, chiefly involving capsules, ligaments, and muscles; (*e*) osteoarthritis, originating in the cartilaginous residue of the articular disc; and (*f*) rheumatoid arthritis starting in the capsular or synovial residue, but extending much beyond the joints. The author suggests that rheumatoid arthritis is to be considered an infective toxaemia associated with metabolic disturbance. In arthritis resulting from metabolic disturbances treatment includes suitable diet, colchicum in gout, and fasting and high colonic irrigation in rheumatoid arthritis; whereas in chronic arthritis following infections of mucous surfaces, as in gonorrhoea, efficient local treatment is the first essential combined with vaccine therapy. Alimentary stasis and hidden septic foci require attention, and the author recommends guaiacol carbonate and potassium iodide in rheumatoid arthritis. He adds that when the joints are affected orthopaedic treatment by splinting, movements, extension, or operation should be adopted, and encouragement with suggestion treatment will strengthen the patient's own efforts.

438. Active Immunization against Diphtheria.

H. ALDERSHOFF (*Nederl. Tijdschr. v. Geneesk.*, October 4th, 1924, p. 1693) states that in Holland the number of children with a positive Schick reaction is much higher than is generally found in other countries. In children under 15 Aldershoff found 64 per cent. positive, Ten Bokkel Huininck 72.1 per cent., and De Lange and Schippers 56 per cent., whereas Schick found positive reactions in only 50 per cent., Zingher in 49 per cent., and Park and Zingher in 32 per cent. The methods of immunization hitherto in use in Holland present the following disadvantages: (1) Intracutaneous injection is not suitable for inoculation of a large number of persons at once. (2) Repeated inoculations as well as Schick testing are a heavy demand on the parents and children, as well as on the doctor. (3) Owing to the instability of the solutions they must be prepared fresh on each occasion. (4) The exact composition of Behring's toxin-antitoxin is not known. Aldershoff's investigations with different mixtures of toxin-antitoxin, as well as the good results obtained in America, England, and Germany, are in favour of the subcutaneous method being employed for immunization in preference to the intracutaneous route. Three subcutaneous injections should be given, each consisting of 1 c.cm., with an interval of a week between each injection.

439. Hypoglycaemia and Recurrent Vomiting.

S. G. ROSS and H. W. JOSEPHS (*Amer. Journ. Dis. of Children*, October, 1924, p. 447) record observations on a child who had repeated attacks of vomiting, drowsiness, acetonuria, acidosis, and occasional convulsions. These attacks were usually accompanied by fever when he took scarcely any food, and an attack occurred once when he had been deprived of food. During an attack, when experimentally starved, or when suddenly deprived of carbohydrate on an otherwise sufficient diet, it was found that the blood sugar and carbon dioxide combining power of the serum were reduced and the symptoms reappeared. Gradual deprivation of carbohydrate had no effect. The hypoglycaemia, etc., was much more rapid in onset in this patient than in five other patients used as controls; he seemed unable to deal immediately with a sudden demand for carbohydrate, produced by its withdrawal from the diet. The authors suggest that the frequent occurrence of fever in cases of recurrent vomiting may be due to the accompanying anorexia causing a withdrawal of carbohydrate, whilst the increased metabolism demands more carbohydrate, in a child unable to meet such an emergency. The attacks were all ended with striking rapidity by giving glucose either intraperitoneally or orally. The authors add that the blood sugar must be estimated at the height of an attack for hypoglycaemia to be detected, since recovery is rapid.

440. Tuberculous Polyserositis.

B. R. WHITCHER (*Boston Med. and Surg. Journ.*, October 30th, 1924, p. 817) reports a case of tuberculous polyserositis in a man, aged 71, in whom the onset was insidious with gradually increasing cardiac discomfort, sensations of fullness in the chest, and marked ascites later. There were no pulmonary symptoms except a very slight dry cough and a slowly developing pressure dyspnoea due to cardiac enlargement and increase of pericardial fluid. At the autopsy the abdomen was found to contain 4½ pints of fluid, and the intestines were bound together by firm adhesions. The right pleural cavity contained 14 ounces, and the left 3½ ounces of fluid; both lungs were adherent to the pericardium. There were 21 ounces of fluid in the pericardial sac, and the parietal pericardium was thickened, necrotic, and contained many small tuberculous foci with giant cells. Throughout the lung substance many tubercles in various stages of development were found, and the peritoneum showed extensive tuberculous involvement. The striking features of the case were: (1) the age, 71 years, tuberculous peritonitis and polyserositis being rare in old age; (2) the marked exudative type of tuberculosis with extensive caseation and necrosis; and (3) the large amount of fluid in the abdominal cavity and pericardial sac, and the smaller quantity in the pleural sacs.

441. The Use of Fine Cannulae for Lumbar Puncture.

K. H. KRABBE (*Ugeskrift for Laeger*, October 30th, 1924, p. 831) discusses various explanations of the unpleasant and even alarming symptoms which not infrequently follow lumbar puncture, and inclines to the view that it is not so much the withdrawal of cerebro-spinal fluid at the time of puncture, as the protracted oozing after it, which is responsible. He suggests that this oozing may be reduced if a smaller cannula than usual is employed. Since the beginning of 1924 he has dispensed with the use of a cannula with a diameter of 1.5 mm., using in its place a cannula with a diameter of only 0.75 mm. Both instruments were of steel, but the new fine cannula was made of the less brittle steel which Danish instrument makers employ for the long needles required for local anaesthesia. Between January and July, 1924, the author has used this fine cannula for 175 lumbar punctures, and he has found it definitely better than the larger cannula, both with regard to the degree of discomfort at the time of the operation and the frequency of serious sequels. In as many as 124 cases there were no ill effects whatever—no headache, giddiness, or vomiting. In 41 cases there was a slight and transitory attack of headache, and in 4 cases the headache lasted a few days. In 6 cases only was there severe headache with repeated attacks of vomiting. On no occasion did the fine cannula break during the operation—an accident which occurred once with the older, thick cannula.

Surgery.

442. Sciatica and Pain in the Back.

G. I. BAUMAN (*Journ. of Bone and Joint Surgery*, October, 1924, p. 909), in discussing the causes of backache or sciatica, points out that absorption from some septic focus must first be excluded. In the cases he is considering the onset of pain is mostly sudden and traumatic in origin, though in some the onset is insidious and associated with a maldevelopment of the vertebrae. Many of the nerve trunks have been found to come into intimate contact with certain of the lumbar transverse processes, and Bauman thinks it fair to conclude that any lesion of a transverse process is likely to be followed by some lesion of a nerve trunk in contact with it. Lumbo-sacral disease appears to be a very rare cause of pain in these cases. The onset is usually sudden and occurs mostly in men doing hard labour. The lesion consists in pressure upon a nerve cord and results in a condition of lumbo-sacral neuritis, due to a lesion of one or other of the lumbar transverse processes, commonly the fifth. In women the third process is often elongated, and is therefore easily injured; it may be the cause of obscure pain in the lower abdomen, groin, or hip. The diagnosis is made by the discovery of definite points of tenderness over the transverse processes. The trouble may be relieved by removing the appropriate transverse process. In 18 cases so treated by the author 14 were cured, 3 improved, and 1 was unrelieved.

443. Spontaneous Necrosis of Testicles.

H. KÜTTNER (*Deut. med. Woch.*, September 19th, 1924, p. 1291) records two cases in which, for no apparent reason such as torsion of the cord, one testicle slowly underwent necrosis. The first patient was a boy, aged 14, who, three years earlier, had developed, without any apparent provocation, transitory swelling of the right testicle. Three weeks before admission to hospital the same testicle became painful and gradually increased in size. A hydrocele was found under which a hard, but scarcely tender, testicle could be felt. Tuberculosis was suspected, but when an operation was performed and a microscopic examination made of the testicle, no evidence of tuberculosis was found. The second patient was a man, aged 27, whose left testicle had become painful and swollen three years previously. Both pain and swelling soon disappeared after rest in bed; but after this attack the testicle gradually shrank till only a small nodule was left. The microscopic examination of this nodule revealed non-specific changes similar to those observed in the first case. In both cases the total necrosis of the testicle was presumably due to an infarct following interference with the circulation of the blood. From three points of view these cases were extraordinary. (1) There was not the slightest evidence of torsion of the cord, which is supposed to be the chief cause of such infarcts of the testicle. (2) The onset of this condition was slow and insidious. (3) The infarct was anaemic and not haemorrhagic. The author has collected from the literature twenty cases in which necrosis of a testicle could not be traced to torsion of the cord, but in hardly one of these cases could it be said, as in the author's two cases, that a perfectly healthy testicle had undergone spontaneous necrosis. From whatever aspect he investigated them, the author could not find in the history of his cases, or in the anatomical or microscopic examination of the testicles, any explanation of the necrosis. The most searching examination failed to reveal evidence of embolism or of injury to the inner lining of the blood vessels.

444. Fracture of the Carpal Navicular.

K. SPEED (*Annals of Surgery*, October, 1924, p. 532) suggests that the position of the navicular bone in the carpus is probably one cause of its injury in falls, back-fires, and other accidents. Navicular fracture, with or without dislocation of one or both fragments, is a fairly frequent occurrence. The blood supply of the carpal bones is rather scanty, and the vessels to the navicular enter it near its middle, where fracture usually occurs, so that they are seriously affected. Many of these fractures may be overlooked, advice being given to use the wrist; the diagnosis of fracture is only made later, when the functional interference is very marked. After proper treatment of a fracture by early and prolonged immobilization the bone may heal satisfactorily. If the fracture is unrecognized, pain increases for some years with loss of function and diminution of grip. Speed points out that after complete fracture the blood supply may be cut off and the main mass of the bone cells undergo slow death: specimens removed six months after fracture show that the main mass of the cancellous bone tissue is dead. After several years the bone is soft and resembles fat. If the fracture is recognized and sufficient rest given, revascularization with preservation of the bone may result; in neglected cases osteoporosis begins, ending in absorption of the bone. In the case of a fractured and undislocated navicular immediate and prolonged splinting is necessary; if dislocation has occurred operative removal is indicated. Delay in these cases effects nothing.

445. Perigastritis.

J. DOBERER (*Zentralbl. f. Chir.*, August 9th, 1924, p. 1720) states that the symptoms of perigastritis, which may also be described as adhesive gastritis, closely resemble those of callous ulcer of the stomach or duodenum. It is probable that congenital predisposition is the cause of the condition. The adhesions only affect the pyloric portion of the stomach, especially the posterior wall, which is closely adherent to the capsule of the pancreas. There are also adhesions between the pyloric end of the stomach and gastro-colic ligament, transverse colon, and in most cases the upper part of the duodenum. All these adhesions can usually be broken down without haemorrhage of any extent, and it is only occasionally that the density of the adhesions necessitates the application of ligatures. In many cases considerable symptomatic improvement can be obtained by diet and suitable drugs, but removal of the cause can only be effected surgically. The method of choice is resection of the pylorus, which is to be preferred to gastro-enterostomy, especially as pyloric resection in these cases can be carried out easily, and is nowadays an operation free from risk. After resection suitable diet and drug treatment must be continued for several months, especially when gastric catarrh has been found at the operation.

Therapeutics.

446. Treatment of Post-encephalitic Parkinsonism.

L. B. HOHMAN (*Bull. Johns Hopkins Hosp.*, October, 1924, p. 335) has treated 18 cases showing the post-encephalitic Parkinsonian syndrome with hyoscine hydrobromide. The average time elapsing between the original acute attack and the onset of the Parkinsonian syndrome was sixteen months; in one patient the interval was as long as five years. The maximum dose was 1/100 grain four times a day. In no case was it necessary to increase the dosage because of any acquired tolerance for the drug. No bad effects were observed, and the patients experienced no uncomfortable symptoms except some difficulty in accommodation, vertigo, and somnolence. As soon as the effective dose was determined the difficulty in accommodation and other untoward symptoms disappeared. In every one of the cases objective improvement was noted. In 6 the improvement was slight, in 5 definite, and in 7 marked. The signs of marked improvement were return to work after months of invalidism and ability to attend to personal wants after being bedridden and helpless. Definite improvement indicated return to full activity after partial invalidism, and the term "slight improvement" was applied to some relaxation of the rigidity, but not enough to increase the practical efficiency of the individual. The improvement in the mental attitude was very striking in a number of patients. Hyoscine was tried in other residues of epidemic encephalitis, such as psychoneurotic states and the behaviour disturbances of children and adults, but in none of these cases was there any improvement.

447. Bulbocapnin in the Treatment of Tremors.

H. DE JONG and G. SCHALTENBRAND (*Klin. Woch.*, November 4th, 1924, p. 2045) record observations made on the action of bulbocapnin, an alkaloid allied to apomorphine, in checking tremor. The action of this drug was tried in four cases of paralysis agitans (two being severe forms), in one case of tremor due to cerebellar disease (tumour), and in one case of "essential tremor." Tracings were taken from the trembling arm, indicating the extent of the tremor before and after the injection of the drug in maximal doses; these curves are shown in the article. Control observations were made by injecting physiological sodium chloride solution. In all six cases the curves indicated marked influence of the drug in diminishing the extent of the tremor, and in one case the bulbocapnin diminished the tremor to one-fourth. The effect of this drug appeared to be independent of the locality of the lesion causing the tremor. These observations, in the opinion of the authors, may form the basis of further research on the practical application of bulbocapnin in the treatment of tremor.

448. The Effect of Alcohol and Nicotine on Salvarsan Treatment.

HÜBNER (*Dermat. Woch.*, October 22nd, 1924, p. 1292) remarks that no one can have failed to be struck by the increasing number of cases within recent years which have proved refractory to salvarsan. Silberstein's experience at the Königsberg University Skin Clinic has been particularly instructive. Whereas in the period 1911 to 1916 the Wassermann reaction became negative in 100 per cent. of the cases treated, during the years 1921 and 1922 it remained positive in 23 per cent. Hübner's experience at the skin clinic of the municipal hospital at Elberfeld has been similar, where there had been a distinct diminution in the efficacy of salvarsan during the period 1919 to the middle of 1922, though since then the results had been decidedly better. This improvement may have been partly due to the introduction of silver-salvarsan, but was mainly brought about by a restricted consumption of alcohol and nicotine. A considerable increase in drinking and smoking took place after the end of the war, as is shown by the fact that the consumption of brandy in Germany per head rose from a little over a quart in 1918–19 to nearly a gallon in 1921–22, and that of beer from 22 quarts in 1918–19 to 48 quarts in 1921–22. These figures do not give an adequate idea of the circumstances, as large quantities of alcohol, and still more of tobacco, including whole shiploads of cigarettes from England, were brought into Germany immediately after the war. Hübner maintains that alcohol and nicotine paralyse the natural defences of the body, without which salvarsan cannot produce its effects. His conviction is based on the much better results which he obtained in patients in the prison at Elberfeld, among whom the action of alcohol and nicotine could be eliminated both before and during treatment. At the end of the course of treatment only 9 out of 100 cases still gave a positive Wassermann reaction.

449. Non-specific Protein Therapy in Syphilis.

S. S. GREENBAUM and C. S. WRIGHT (*Arch. Derm. and Syph.*, November, 1924, p. 551) consider the effects of non-specific protein therapy in syphilis, especially in its cutaneous manifestations. After a preliminary course of six intramuscular gluteal injections of a 4 per cent. sterile suspension of milk protein at intervals of two or three days, a series of weekly injections of neo-arsphenamin was given and the Wassermann test performed. In 35 cases of acute secondary cutaneous lesions some were found to improve rapidly, whereas in other types the eruption became profuse following the milk protein stimulation, while tertiary gummatous lesions showed involution, and tertiary ulcerative lesions healed rapidly. The authors remark that in chronic syphilis non-specific protein therapy appears to influence favourably the conquest of the disease, and by stimulating the natural protective forces of the body should prove of distinct value as an adjunct to specific treatment.

450. Tetanus cured by Large Doses of Serum.

TRABAUD and BAUR (*Bull. Soc. Méd. des Hôp. de Paris*, October 16th, 1924, p. 1348) report the following cases. (1) A girl, aged 6½, was admitted into hospital complaining of stiffness of the jaw of five days' duration. There was nothing in the mouth to account for the trismus, but for the last three days there had been general tetanus. The pulse varied from 120 to 130 and the temperature was 100° F. The cause of the tetanus was a small wound in the sole of the foot, due to treading on a nail about ten days previously. In the first three days 430 c.cm. of antitetanic serum were given; some chloral was also given at night. The child quickly recovered, and beyond some erythema and enlargement of the glands suffered no inconvenience from the serotherapy. (2) A woman fractured her astragalus, a fragment projecting through the skin. The fragment was removed and 10 c.cm. of antitetanic serum given, the wound dressed and put in plaster, 30 c.cm. of antigangrene serum being then given. The temperature was 100.5° F. and the pulse 98 to 110. Six days later some sloughing of the skin occurred and 50 c.cm. of antigangrenous serum were given. A few days later a localized tetanus set in and 100 c.cm. of antitetanic serum were given daily, followed later by doses of 50 to 20 c.cm., 740 c.cm. being given in all in the course of the disease. Eventually the woman made a good recovery.

Neurology and Psychology.

451. Korsakoff's Psychosis and Typhoid Fever.

P. GERBEAU (*Thèse de Paris*, 1924, No. 203), who records an illustrative case, states that typhoid fever may be complicated during the acute stage by a number of mental disturbances, of which the commonest are mental confusion, ill systematized hallucinatory delirium, and Korsakoff's psychosis. The essential features of Korsakoff's psychosis in typhoid fever, as in other infections and intoxications, are amnesia of fixation, fabulation, false recognition, and euphoria. As a general rule Korsakoff's psychosis in typhoid fever is not accompanied by polyneuritis, which is not an essential feature of the syndrome and may be absent in other infections or intoxications. The prognosis is usually grave. The treatment should not be carried out in an asylum, but in a psychiatric clinic, so as to spare the patient the taint of internment in an asylum. Gerbeau's patient was a soldier, aged 36, who developed Korsakoff's psychosis at the height of a typical uncomplicated attack of typhoid fever. The syndrome rapidly developed with all its essential features. Anterograde amnesia of fixation was particularly marked, and the other symptoms were present, though less pronounced. The mental disturbance slowly subsided as the primary disease cleared up, and did not leave any sequelae.

452. Nervous and Mental Complications of Antityphoid Vaccination.

G. ROUSSELOT (*Thèse de Paris*, 1924, No. 129) states that nervous and mental complications in typhoid fever are rare. Among more than 3,000 patients admitted to the Nantes psychiatric centre from 1914 to 1919 Benon found only four or five cases in which the origin of the affection could be attributed to this cause. Laignel-Lavastine, at the centre for psychoneuroses of the military government of Paris in 1916, had only five cases in which neuropsychic symptoms developed after antityphoid inoculation—namely: (1) hemiparesis of the right lower facial with dysarthria due to cerebral syphilis, which developed a few hours after the injection of vaccine; (2) functional scoliosis, which occurred after the third injection and disappeared in the dorsal decubitus; (3) mental confusion, which occurred after the first injection in a subject with an extremely emotional constitution; (4) hysterical paralysis following the second injection in a man who had a similar paralysis nine years previously; (5) simulation in a subject with profound mental debility. After the fourth injection the patient was unable to stand, although there were no physical signs to account for the sudden paraplegia. Mairet and Piérou observed eleven cases at the neuropsychiatric centre of the sixteenth region where typhoid or paratyphoid inoculation was followed by epilepsy, hysterical attacks, chorea, circular insanity, and melancholia. Rousselot reports three personal cases. The first was that of a man with an hereditary history of insanity who, during a period of five years following antityphoid inoculation, presented alternate periods of maniacal excitement and asthenic depression. In the second case the injections were followed by general weakness and disturbance of gait necessitating admission to hospital. Complete recovery ultimately took place. In the third case the injections were followed by attacks of hysteria major.

453. Dermatophobia.

K. GRÖN (*Tidsskrift f. d. Norske Laegeforening*, November 1st, 1924, p. 969) has observed recently three characteristic cases of dermatophobia. The patients were women, and their ages were between 48 and 65. Apart from dermatophobia, there was little evidence that they were mentally unbalanced. On the other hand, their attitude towards their supposed complaints was remarkably fixed, and, in spite of varied and protracted treatment, the results were unsatisfactory. One patient complained of intolerable itching; she associated this with a cutaneous eruption, the existence of which could not be verified. She insisted also that four of her children, her husband, her sister, and her brother-in-law suffered from the same complaint. She was treated in hospital in the hope that a complete change of residence and surroundings would eradicate her false impressions. Injections of her own serum were also given, but no permanent benefit resulted. In another case the complaint of itching was attributed by the patient to the unverifiable presence of lice. She described their size and movements, and insisted that her husband and son suffered in the same way. A physical examination was negative, and her general condition was good. In her case also hospital treatment had a palliative rather than curative effect. Grön finds that, apart from the dermatophobia of the definitely insane, this condition has received scant attention in the medical press, but it is well defined, and the clinical picture in his three cases was remarkably uniform. In no case had there been any previous attack of skin disease or parasitic invasion to support the suspicion that there might be a persistence or recurrence of some previous complaint. In every case also the only lesion of the skin was that inflicted by the patient herself in her attempts to relieve irritation. A further feature common to each of these cases was the patient's passion for collecting portions of skin and scales for examination by her doctor. The author is pessimistic about the prognosis, and adds that this complaint may ultimately give rise to very troublesome hallucinations.

Obstetrics and Gynaecology.

454. Caesarean Operation in Infected Cases.

L. PORTES (*Gynécol. et Obstét.*, 1924, x, 4, p. 225) describes a modification of Caesarean operation which, as suggested by Couvelaire, has been performed in four cases by Portes and in six cases by other French surgeons. It is performed in two stages, of which the first consists in drawing the uterus out of the opened abdominal cavity, suturing the abdominal wall, incising the uterus, and extracting the foetus. The operation is continued about thirty days later; in the absence of uterine infection the cicatrized and partially involuted uterus is restored to its pelvic situation. This two-stage operation is chiefly indicated in cases of dystocia in which labour has been in progress for some time and infection of the uterus is demonstrable or clinically probable. Its object is to preserve at the time of hysterotomy the peritoneal cavity and the subperitoneal connective tissue from being infected from the uterus. This Caesarean operation described by Portes has a limited application, but will, it is claimed, prevent in certain instances the necessity for embryotomy or Caesarean hysterectomy. The immediate results of the two-stage operation have been satisfactory; there has been no maternal fatality, although many of the patients were in a grave condition at the time of the first operation. Uterine involution does not appear to have been materially retarded nor lactation adversely affected. Apart from pelvic contraction, the cases included one of impacted shoulder presentation and one of fibroma praevia. In his four cases

Portes has always sutured the uterine wound after hysterotomy, but in two severely infected cases the scar subsequently gave way. In cases which are obviously badly infected he is not opposed to leaving the uterine incision open at the end of the first-stage operation. He admits that it is too early to speak of the later gynaecological history or the future obstetrical history of patients submitted to the operation described.

455. Maternal Albuminuria and Foetal Death.

A. J. POWILEWICZ and MORACE (*Gynécol. et Obstét.*, 1924, x, 4. p. 281) have analysed the records of the Baudelocque Clinic with reference to the effect of the death of the foetus on albuminuria in 94 cases of pregnancy toxaemia. In 71 instances they found, in contrast with the classic opinion, that albuminuria persisted until labour. They add that in the albuminuric patient whose foetus dies in the uterus (1) the albuminuria may undergo no change—this group consists of women with chronic renal lesions usually first revealed by systematic urine testing during pregnancy; (2) in about one-fourth of cases the albuminuria disappears but may recur at the time of labour; (3) in the majority of cases the albuminuria becomes considerably diminished but persists until labour, at which time in about 10 per cent. of cases it increases, though only slightly. They conclude that the toxaemic pregnant subject requires supervision and prophylactic treatment even after death of the foetus.

456. Treatment of Uterine Flooding.

G. HALTER (*Zentralbl. f. Gynäk.*, September 13th, 1924, p. 2000) describes the treatment by radium of uterine flooding at the climacteric and before. He considers, however, that radium therapy is contraindicated (1) in young women where fertility is important, (2) when myomata are present, (3) where there is chronic inflammation of the appendages. A preliminary curettage should always be performed, and the scrapings examined histologically. About four days after the curettage the os is dilated and the tube of radium is pushed into the uterine cavity. Radium barium chloride, in varying dosage, contained in silver tubes 0.6 mm. thick, is used. The length of exposure depends on the degree of flooding and on the age of the patient. Halter considers that in a young woman the dose should be less than 800 mg.h., but in a menopausal case as much as 990 mg.h. may be given, and the treatment be repeated in six weeks. He has had more success in menopausal cases, but attributes this to the lower dosage necessary in treating younger women. He also finds that menorrhagia is more easily cured than metrorrhagia, and suggests that this is due to the fact that in the former the uterine mucous membrane goes through the normal menstrual cycle and remains unaltered, whereas in the latter there is pathological thickening which prevents penetration of the rays.

Pathology.

457. Calcium Content of Blood Serum in Gout.

V. COATES and P. C. RAIMENT (*Biochem. Journ.*, vol. xviii, No. 5, p. 921) have undertaken an investigation of the calcium content of the blood serum in cases of gout. The patients selected, six in number, were suffering from unmistakable gout; four of them were in the quiescent stage and two in the process of recovering from an acute attack within the preceding thirty-six hours. The blood was collected from the median basilic vein into sterile tubes, where it was allowed to clot. The resulting serum was centrifuged, and the calcium content estimated as soon as possible by Kramer and Tisdall's method. The results showed that the figures varied from 16 to 24 mg. of calcium per 100 c.cm. of serum, the average being 18.87 mg. As the normal calcium content of the serum is about 10 mg. per cent., it was clear that the amount was definitely increased in the gouty patients. This increase might conceivably be due to the age of the patients (the youngest of whom was 46), to hypertension or atheroma, or to some technical defect, such as the decolorization of the permanganate by bodies other than calcium. That it was not dependent on the age of the patients seems to be shown by the fact that two non-gouty controls, aged 52 and 57 respectively, had a calcium content lower than the lowest figure obtained in the gouty patients. The second suggestion is negatived by the work of Weil, who found that in atheroma and hypertension the calcium was not markedly increased. Finally, the possibility of a technical error was not supported by experimental work designed to elucidate this. The authors therefore conclude that in gout there is a rise in the calcium content of the serum, and that this rise is specifically due to the gout and not to any extraneous factor.

458. The Physiological Antagonism between Caffeine and Insulin.

H. LABBÉ and B. THÉODORESCO (*Ann. de Méd.*, September, 1924, p. 211) record their experiments on the rabbit and the dog. They found the toxic action of caffeine so marked in the rabbit that every animal died. But their observations on the dog are of interest. The experiments may be divided into three groups: (1) those in which insulin alone was injected; (2) those in which caffeine alone was injected; (3) those in which the two were combined. In group (1) the insulin was injected hypodermically in doses ranging from 2½ to 4 units, and there was a fall in the amount of blood sugar, which reached its maximum two to two and a half hours after the injection, rising slowly later. In group (2) the caffeine was injected subcutaneously or intravenously in doses ranging from 1 to 2 grams: 7 out of the 10 animals in this group died in thirty minutes to thirteen hours. In every case the blood sugar rose to its maximum one and a half to one and three-quarter hours after the injection. In the last group, with simultaneous injection of caffeine and insulin, there was always a hypoglycaemia, the amount and the rate of fall varying. The doses ranged from 1 to 2.5 grams of caffeine with 3 units of insulin to 2.25 to 3 grams of caffeine with 5 units of insulin. Four out of the eight animals in this group died in four to seven hours. The authors hold that the hyperglycaemic action of caffeine is due to its stimulation of the suprarenals and the excessive production of adrenaline. They see in their experiments proof of the antagonism between the suprarenals and the pancreas in the regulation of the amount of blood sugar.

459. Endocrine Insufficiency.

D. MARINE, O. T. MANLEY, and E. J. BAUMANN (*Journ. Exper. Med.*, October, 1924, p. 429) report on the influence of thyroidectomy, gonadectomy, suprarenalectomy, and splenectomy on the thymus gland in 373 rabbits, the observations having extended over a period of ten years. Four principal facts emerge. (1) Thyroidectomy hastens involution of the thymus and other lymphoid tissues. (2) Gonadectomy delays thymus involution. (3) Sublethal but sufficient injury to the suprarenal function with an intact thyroid delays involution of the thymus and lymphoid tissue, and may cause their regeneration. (4) Thyroidectomy prevents thymus regeneration following suprarenalectomy. It was observed that suprarenalectomy combined with gonadectomy is a more powerful stimulus for thymus and lymphoid regeneration than either of these influences alone. The combination of these two factors results in rabbits in certain thymus and lymphoid hyperplasia, which persists until regeneration of accessory "inter-renal" tissue corrects the physiological defect. The syndrome thus experimentally produced—abnormal overgrowth of the thymus and lymphoid tissues, lowered resistance, and relative lymphocytosis—resembles status lymphaticus, and is believed to depend mainly on a partial loss of certain functions of "inter-renal" and sex glands rather than of the chromaffin tissue. The conclusion is drawn that underdevelopment of certain functions of the "inter-renal" and sex glands is the cause of the normal and abnormal lymphoid and thymic hyperplasias of childhood, and that a partial suppression of these functions underlies exophthalmic goitre, Addison's disease, and acromegaly.

460. B. proteus obtained from Rickettsia prowazeki.

B. FEJGIN (*C. R. Soc. de Biologie*, October 31st, 1924, p. 976) has been studying the virus of typhus fever, with particular reference to its development in the intestine of the louse. One strain of *Rickettsia prowazeki*, which had reached its seventy-first passage through the louse, was planted out in Besredka's egg medium and in a serum medium; these media were later streaked on to agar slopes. Colonies were obtained, each surrounded by a halo tending to become diffuse. When subcultured on to fresh agar these colonies gave rise to a spreading growth, highly suggestive of *B. proteus*. Further examination of the strain showed that it fermented glucose and sucrose, liquefied gelatin, and gave a dirty brown growth on potato. Morphologically it was a motile rod, with a considerable amount of polymorphism: its reaction to Gram's stain was variable. It was not agglutinated by normal rabbit serum, nor by the serum of a rabbit immunized against an ordinary *B. proteus*, but it was agglutinated by the serum of a rabbit immunized against *B. proteus* X 19—the organism which is used for the diagnostic agglutination test in cases of typhus fever. Cultures of the intestines of normal lice made under similar conditions failed to give rise to this organism. The author refrains from drawing conclusions as to the relationship existing between the *Rickettsia prowazeki* and the *B. proteus* which he obtained from it.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

481. Myeloid Leukaemia of the Skin.

J. L. TENENBAUM (*Arch. Derm. and Syph.*, November, 1924, p. 557) reports the extremely rare condition of myeloid leukaemia of the skin in a man, aged 60, with negative family, personal, and venereal history. The skin, especially on the trunk and flexor surfaces of the extremities, was mottled with small petechiae and larger coalescent purpuric spots, and the oral and pharyngeal mucous membranes were studded with haemorrhagic lesions. There were also large numbers of bluish-brown papules and slightly elevated discrete globular nodules; a few larger tumours of the same character were present, the largest being on the inner side of the left thigh, with bubo-like glandular masses in the groins. The diagnosis was based upon the rather sudden development of the bluish, firm, painless tumours and nodules, which showed no tendency to ulceration, together with the absence of internal malignancy, and the haemorrhagic cutaneous diathesis in a well nourished man who showed no sign of any grave constitutional disturbance. The spleen and liver were enlarged and the blood picture was atypical, with the appearance of immature myelogenous cells and a relatively low white blood count. The absence of fever and the slow chronicity distinguished the case from the fulminating form of myelosis.

482. Lesieur's Sign in Typhoid Fever.

J. CHALIER (*Progrès méd.*, October 15th, 1924, p. 619) states that in 1908 Lesieur, in the thesis of his pupil Collignon, drew attention to the frequency in typhoid fever of impaired resonance at the right base, especially on percussion posteriorly and in the axilla. He attributed the phenomenon to hepatic enlargement or to pushing back of the liver by the distended colon. In a subsequent paper, published in 1913 (*Presse médicale*; July 30th), he furnished statistics of 150 cases in which he had investigated the sign. His observations as to the frequency of the sign in typhoid fever were confirmed by the Roumanian clinicians Radulesco and Atanassiu. The sign is investigated as follows: The patient is placed in a sitting position with the trunk slightly bent forwards and the shoulders dropped. The right base is then percussed in a transverse direction between the vertebral column and the posterior axillary line and vertically between the apex of the scapula and the lower ribs. A rectangular zone is thus marked out in which impairment of resonance can easily be detected. The sign appears early and persists throughout the height of the disease. Lesieur found it present in 80 per cent. and Mouriquand in 70 per cent. of their typhoid cases. In Chalier's series of 85 cases it was found in 65, or 77 per cent., so that it was almost as frequent as enlargement of the spleen, which was present in 85 per cent., and much more frequent than rose spots, which were present in only 60 (65 per cent.), and palatal ulcers, which were found in only one-fifth to one-sixth of all the cases. The sign is also of some prognostic value, as it is more likely to be absent in mild than in severe cases.

483. Cerebro-spinal Complications in Recent Syphilis.

J. LEYBERG and A. STARZYNSKI (*Ann. de Dermatol. et de Syph.*, October, 1924, p. 571) observe that neuro-syphilis may exist for a long period without clinical signs, and be discovered only by examination of the cerebro-spinal fluid (Ravaut). They add that the spirochaete seldom invades the central nervous system by the lymph channels surrounding the nerve endings of the area of primary infection; more frequently there is a general blood infection, during which the spirochaetes may penetrate the arachnoid and pia mater of the brain and cord. Many authorities find, however, that the majority of these patients show no pathological changes in the cerebro-spinal fluid. Jacob and Weygandt have found only 50 per cent. of lesions of the central nervous system in cases of recent syphilis; Steiner has found 33 per cent. Several investigators have stated that in recent infections they have found spirochaetes in the cerebro-spinal fluid which had produced no local pathological change; the present authors think that in the absence of some unknown factor spirochaetes are unable to attack the tissues, remaining as saprophytes, and sooner or later dying. Levaditi and Marie attribute nerve involvement to a particular strain of *Spirochaeta pallida*. The present authors only insist on meningeal invasion being considered the beginning of nerve lesions, occurring only in a certain number of cases, and being recognizable in the early stage by examination of the cerebro-spinal fluid. Symptoms of meningeal and neuro-syphilis may follow small repeated doses of salvarsan. Meningo-neural relapses may occur in patients not under treatment at the time, and must be distinguished from haemorrhagic encephalitis occurring two or three days after an injection of salvarsan, and always fatal. The former appear some weeks after the last injection of salvarsan, and, if recognized in time, may be cured by stronger doses of salvarsan. In view of the fact that after the intravenous injection of large doses of salvarsan only minute quantities of the drug can be recovered from the cerebro-spinal fluid, the authors think it probable that these small quantities of salvarsan serve to stimulate rather than kill the spirochaetes. They quote statistics to show that neuro-syphilis occurs more frequently in cases without cutaneous eruptions. They add that inequality of the pupils or absence of reaction to light are very important symptoms of invasion of the central nervous system, and insist on the necessity of examining the pupils in every case of recent syphilis. The authors conclude that: (1) The clinical complications affecting the nervous system occur far more frequently in cases of recent syphilis than hitherto supposed. (2) Subjective phenomena (headache, vertigo, tinnitus, etc.) ought never to be neglected. (3) In all cases of syphilis at the period when relapse may occur, a careful examination of the nervous system, especially of the visual and auditory apparatus, should be made. (4) In cases of nerve lesions, the Bordet-Wassermann examination of the blood without that of the cerebro-spinal fluid is insufficient and misleading. (5) The disappearance of clinical symptoms under specific treatment does not exclude the possibility of relapses, nor prove that cure has been effected. The condition of the cerebro-spinal fluid may assist in prognosis, and indicate the necessity of further treatment. (6) The cerebro-spinal fluid must be considered pathological in the presence of any one of the three reactions of Nonne (Wassermann reaction, globulin reaction, and cellular reaction). (7) Normal cerebro-spinal fluid does not contraindicate a diagnosis of syphilis, for it remains normal (*a*) when the morbid process does not commence in the meninges but in the vessels, and the fluid remains separated from the morbid focus; (*b*) when the anatomical process has completed its evolution.

Surgery.

484. Empyema Mortality in Children.

W. E. LADD and G. D. CUTLER (*Surg., Gynecol. and Obstet.*, October, 1924, p. 429) discuss the question why empyema in children is quite different from that in adults, basing their conclusions on a series of 268 operation cases. The mortality in infants under 1 year suffering from pneumonia, even without the complication of empyema, is exceedingly high, being about 66 per cent. With increasing age the mortality falls, and after the eighth year is very small. The next most potent factor in mortality is the type of the infecting organism. The streptococcus was found to be associated with the highest mortality, which in a series of 35 cases was 28 per cent.; in 160 cases of pneumococcal infection the death rate was 15 per cent. The mortality is very high if an operation is performed during the pneumonic stage. Aspiration should be practised during this stage, reserving more thorough drainage until the less acute stage is reached. Intercostal drainage and an attempt to keep the thorax closed round the tube is said to be the operation of choice for most cases with streptococcal infection. Rib resection and freeing of pleural adhesions, to allow the lung to expand, is recommended for convalescent cases. The authors consider gas-oxygen to be the anaesthetic of choice for rib resection operations; novocain with adrenaline is valuable in those for intercostal drainage, but ether is contraindicated in all cases.

485. Ulceration of Meckel's Diverticulum.

A. BRASSER (*Zentralbl. f. Chir.*, November 1st, 1924, p. 2423) states that the occurrence of Meckel's diverticulum in the lower ileum is relatively common, and is of practical importance, since it may cause strangulation by bands and originate other forms of acute intestinal obstruction. Hilgenreiner collected 185 cases in which obstruction was due to persistence of the diverticulum, and Brasser thinks that it should be more generally known that ulceration and perforation of Meckel's diverticulum may occur. Brasser's patient was a boy, aged 15,

who had violent pain in the hypogastrium, followed by such severe haemorrhage from the bowel that a polypus or other tumour was suspected. On admission the patient was profoundly anaemic; an exploratory laparotomy showed the entire large intestine to be full of blood; no tumour could be felt and the mesentery appeared to be normal. In the circumstances the intestine was not opened, but peritonitis supervened in eight days, and the patient died on the tenth day. At the autopsy a Meckel's diverticulum was found in the usual position, 20 inches above the ileo-caecal valve. It was conical, as large as a pigeon's egg, and at its distal end there was a club-shaped swelling. To this swelling was attached the apex of the appendix, which was 4 inches in length. There was no communication between the diverticulum and the lumen of the appendix, but on the posterior wall of the diverticulum, close to its origin from the ileum, there was a circular perforation and the surrounding peritoneum was reddened and covered with flakes of fibrinous exudate. The mucosa of the appendix was intact. Although several authors have described fatal cases of ulceration of Meckel's diverticulum due to the presence of concretions and entozoa, Brasser found nothing but a chronic catarrhal hypertrophy of the mucosa in this case.

466. Post-operative Tetanus.

F. SATTA (*La Chirurgia degli organi di movimento*, August, 1924, p. 605) alludes to a recent paper by Wohlgemuth, who had collected 27 cases of post-operative tetanus which had occurred in the course of twenty-five years. In most of the cases the possibility of exogenous infection due to imperfect asepsis and contamination of catgut ligatures could be excluded. As all the cases had occurred after abdominal operations in which the intestine had been injured or the operation wound had been contaminated with faeces, and none had occurred after operations on the thorax, extremities, or skull, and in view of the fact that the faeces have been found to contain *B. tetani* in 5 per cent. of all cases, the infection probably arose from the intestinal contents. Consequently Wohlgemuth was of opinion that a prophylactic injection of antitetanic serum should be given after operations in which the intestine was injured, just as after a recent wound. Satta now records three cases of post-operative tetanus, two of which were fatal, while one ended in recovery, following orthopaedic operations on the feet. As the operations had been carried out under the most rigorous asepsis, Satta, like Wohlgemuth, considered that the infection was endogenous and was due to the presence of *B. tetani* in the skin and subcutaneous tissue. He therefore recommends that all subjects whose skin shows signs of previous ulceration should receive a prophylactic injection of tetanus antitoxin before operation.

467. Syphilis of the Stomach.

GUYOT and J. CHAVANNAZ (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, October 10th, 1924, p. 818) describe the case of a married woman, aged 42, who had suffered from abdominal pains of so severe a type that her medical attendant had diagnosed gall-stone colic and had given morphine hypodermically. No vomiting or fever was present, but there was emaciation and slight jaundice. At 22 years of age she had had a healthy child, and later two miscarriages, the latter of which occurred in 1919. She was then confined to bed for two and a half months, and had since suffered from abdominal pains. A very tender spot was found over the head of the pancreas, and the stomach was obviously dilated. No history of haematemesis nor of melaena was obtained, and the gastric contents contained no free acid. A skiagram showed a dilated stomach descending well below the umbilicus, with a permanent central constriction corresponding to the painful spot. No evidence was obtained of diverticulum, ulcer, pyloric stenosis, tabes dorsalis, nor of syphilis. A median supraumbilical laparotomy was performed; the stomach was found to be very dilated, and a narrow band across its anterior surface was excised. No other gastric lesion was found nor any scarring, but there were numerous enlarged lymph nodes on both curvatures. The gall bladder and ducts were healthy. Two of the enlarged lymph nodes were excised, but showed no evidence of cancer nor of tuberculosis. As the pain persisted the Bordet-Wassermann test was performed, and a positive result obtained. The patient was given a course of five injections of novarsenobenzol in novocain solution subcutaneously, because her veins were so small that the intravenous route was practically impossible. She was discharged three weeks later in good general health, and two months afterwards her sister reported that she had resumed her normal life and could eat any food without pain. In the subsequent discussion Massé remarked that, according to certain authors, gastric ulcer was a specific lesion, and that the Bordet-Wassermann reaction was always positive.

Therapeutics.

468. The Therapeutic Use of Oleum Chenopodii.

W. STRAUB (*Klin. Woch.*, October 28th, 1924, p. 1993) reports a case of poisoning from oleum chenopodii given three times a day in the usual doses. Severe enteritis followed and death occurred in a few days. Four other cases of a similar nature are mentioned. Oleum chenopodii is a valuable drug in the treatment of affections due to ankylostoma (hookworm). The secret of its satisfactory use lies in preventing absorption; Straub thinks that the fatal results were probably due to the drug being given three times a day. He states that it is important that the drug should be given in one sufficiently large dose, and that then it should be expelled from the intestines by an aperient. If a satisfactory result is not obtained by this dose, an interval should elapse before the treatment is repeated. The method used in Central America (W. E. Deeks) is quoted. The evening before the treatment the intestines are cleared by magnesium sulphate; next morning at 7 o'clock twenty-four drops of oleum chenopodii in a gelatine capsule are given on an empty stomach. This is stated as the dose for an adult, and the capsule should have been recently filled. Two hours later a similar dose of the aperient is given, and the treatment is then complete. The second aperient is given in order that the oleum chenopodii may not remain longer in the intestine than is absolutely necessary. Repetition of the treatment, if required, should only be undertaken after two weeks. In no case should a second treatment immediately follow the first, as otherwise toxic symptoms may be expected. Straub concludes that by taking these precautions oleum chenopodii may be used without risk.

469. Protein Therapy in Gonorrhoea.

H. E. AHLSWEDE and W. BUSCH (*Urol. and Cut. Review*, November, 1924, p. 659) have employed non-specific protein therapy in the form of injections of milk as an adjuvant treatment of gonorrhoea. The injections were given intramuscularly at a point in the upper and outer quadrant of the gluteus about 4 or 5 cm. below the upper edge of the pelvic basin. In acute gonorrhoea the first dose should be at least 4 c.cm., and each following dose is increased by 2 c.cm. The result is often astonishing. The secretion suddenly decreases, the pain ceases, and the urine becomes clear. Local treatment meanwhile should not be neglected. Usually the total duration of the treatment with simultaneous milk protein injections is much less than with the ordinary treatment alone. The effects upon inflammation of the epididymis are particularly favourable. After three or four injections the swelling and pain disappear and the cloudy urine becomes clear. Protein therapy is also of value in suppurative adenitis. In about half the cases suppuration may be prevented by energetic doses. In the remainder the severe pain decreases, the abscess forms much more quickly, and complications are much fewer. Injections of milk are also very beneficial in soft sore associated with gonorrhoea.

470. Vaccine Treatment of Soft Chancre.

FURTHER work on the bacteriology and treatment of soft chancre has been performed by C. NICOLLE and P. DURAND (*Arch. de l'Inst. Pasteur de Tunis*, October, 1924, p. 243), with some very interesting results. In this article they recapitulate the methods for isolating the bacillus of Ducrey from the lesion in the human body. After opening the chancre under aseptic conditions cultures were made on a medium consisting of 3 per cent. nutrient agar containing 20 per cent. of defibrinated rabbit blood, put up in large tubes with a big surface for the slope. After isolation, the bacillus was best maintained in a medium of 0.25 per cent. nutrient agar, likewise containing defibrinated rabbit blood. Subcultures were made from one medium to the other; on the first medium growth was allowed to continue for three days, on the second for twelve days—both at incubator temperature. Emulsions of the organism were made by incubating it on the first medium, washing the growth off in saline, centrifuging, suspending the deposit in saline, shaking with glass beads to break down the clumps and chains of the streptobacillus, centrifuging and repeating the breaking-up process, and finally suspending the bacilli in saline and standardizing to a strength of 450 million organisms per cubic centimetre. This they call their normal emulsion; it was preserved with 2 per cent. phenol. This emulsion is the one used for Reenstierna's intradermal diagnostic test. An intracutaneous injection of 0.2 c.cm. is given. If the patient is suffering from, or has suffered from, a soft chancre, a local reaction appears on the next day in the form of a papule, which reaches its maximum size after forty-eight hours, as a rule, when it is surrounded by a zone of congestion and oedema. The reaction is stated to be absolutely specific and of great practical value. It is

sometimes absent during the week following infection, but it may be present within two days. Its intensity appears to increase proportionately with the time elapsing since the incidence of infection, and to be greater in cases with buboes. Vaccine treatment has resulted in considerable success. An emulsion of organisms of half normal strength—225 million per cubic centimetre—was injected intravenously every other day, starting with a dose of 1/2 to 1 c.cm. and increasing up to 2 c.cm. In 25 cases of uncomplicated chancre cure resulted in an average period of twelve days, while in the case of those complicated with buboes or with ulceration the necessary time was seventeen days. The treatment was most successful in early cases. The general reactions caused by the vaccine were very irregular both in appearance and degree, but they did not appear to give rise to any serious inconvenience. Only one patient out of 41 treated proved refractory to vaccine treatment, and in this case the diagnosis was doubtful.

Dermatology.

471. Indurative Erythema of the Lower Limbs.

S. N. VENDEL (*Ugeskrift for Laeger*, October 16th, 1924, p. 791) describes a condition observed in about 75 persons by six neighbouring practitioners in Denmark during the past five or six years. Though the disease appeared to be well defined, even consultations with specialists failed to give it a generally recognized label, such as erythema pernio, nodosum, or induratum (Bazin). The skin and subcutaneous tissues of both legs were thickened from a point just above the external malleolus. The front and outer aspects of the legs were involved, the patches of thickened skin being of the size of a child's hand or larger. The upper limit of this thickening was ill defined, whereas the lower limit was fairly abrupt. The skin was red, cyanosed, or blue, the colours resembling those following Bier's stasis. Cutis anserina was often observed, and the first impression given on examining the skin was that of oedema, but there was no pitting on pressure with the tip of a finger. The pallor induced by pressure lasted only so long as it was maintained. The patients felt cold and complained of pain, tenderness, paraesthesia, and great lassitude. The disease was always bilateral and was confined to young women, beginning usually for the first time between the ages of 14 and 20. It lasted throughout the year, but was most troublesome in the cold seasons. In one case it had lasted for twelve years. In many cases there were other signs of a defective circulation, such as cyanosis of swollen hands and arms. In about a third of all the cases flat-foot was also present, but in no case was tuberculosis diagnosed, and only in one case were superficial varicose veins, and in another case varicose veins in the popliteal space, observed. The author eliminates chilblains from the diagnosis on account of the absence of itching, seasonal incidence, and of ulceration; the site of the lesions was also not characteristic of chilblains. Erythema nodosum could also be eliminated on account of absence of fever and an acute onset, and the author indicates his ignorance of this condition by heading his paper "Erythema?"

472. Acute Disseminated Lupus Erythematosus.

C. S. KEEFER and A. R. FELTY (*Bull. Johns Hopkins Hospital*, September, 1924, p. 294) report three fatal cases of this disease, which was first described by Kaposi (1872). All the patients were women—one white (aged 21) and two negresses (aged 26 and 36 years). The white patient and the elder negress had swelling and pains in joints with some fever; the younger negress complained of "soreness in the stomach." The family history in each case was negative and all had been in good health prior to their fatal illnesses. None had had any previous skin eruption. Fever was present in all cases; it was remittent and prolonged. Two were known to have had several remissions, during which no symptoms were present; after varying periods they relapsed. Arthritis with slight periarticular swelling (shown by x rays) was present in each case. The skin lesions were diffusely scattered chiefly over the face, extremities, chest, and trunk, in two cases on the palms as well. The lesions were dry, scaly, and pinkish, and they healed with slight scar formation and some spots of pigmentation and atrophy. Extreme tenderness and marked swelling of the limb muscles were present. Profound prostration, sweats, and delirium were outstanding features, with moderate general lymphadenitis; in two cases the spleen was palpable. In one case each exacerbation of fever was accompanied by great swelling of the lymph nodes and spleen, as well as by increase in the extent and severity of the skin lesions. There was no clinical evidence of tuberculosis, no petechiae, and no evidence of organic heart disease in any case. Moderate secondary progressive anaemia was present in all. The leucocyte counts were normal except when another infection was superimposed; leucocytosis then occurred. The differential counts were normal. The Wassermann reactions were negative and all blood cultures were negative, except in one case where there was a transient *Streptococcus viridans* bacteriaemia. No gross distinctive lesions were found at the necropsies. The authors conclude that "the etiology of lupus erythematosus is far from being settled, though the general consensus of opinion is distinctly against the theory that the skin lesions are tuberculous." They quote MacLeod as remarking: "It is not a pathological entity but rather a cutaneous symptom of peculiar type, which may be called forth by a variety of causes, toxic or septic in character."

473. Psoriasis and Seborrhoeic Eczema.

A. CIVATTE (*Brit. Journ. Derm. and Syph.*, November, 1924, p. 461) discusses the pathological anatomy and diagnostic histology of psoriasis and seborrhoeic eczema. While clinically the two conditions may present difficulties in differential diagnosis, histologically they are clearly defined, since microscopic sections show preceding stages side by side with the fully developed lesion. In psoriasis polynucleosis is present, no vesicle, but a rupture of the rete mucosum with intracellular rather than intercellular oedema, and little or no spongiosis, whereas in the eczematide there is mononucleosis, vesiculation, and spongiosis. The lesion of psoriasis is attributed to the action of a virus or toxin coming from within, while the initial subcorneal lesion of an eczematide suggests surface infection. This bears out the clinical manifestations of the two conditions, in that psoriasis is always threatening to relapse in spite of treatment, whereas external treatment of an eczematide results in permanent cure. Civatte adds that histologically the two conditions are clearly seen to be distinct diseases, although their terminal stages give rise to difficulties in differential diagnosis.

474. Besnier's Prurigo in Association with Asthma.

K. BAAGÖE (*Ugeskrift for Laeger*, August 14th, 1924, p. 609) draws attention to the frequency with which Besnier's prurigo occurs among young persons suffering from asthma. Among 67 asthmatics under the age of 20 he found Besnier's prurigo in 13; in another case of Besnier's prurigo the brother of the patient suffered from asthma, and in yet another case of prurigo the patient's father was an asthmatic. These cases of prurigo were tested for anaphylaxis by skin reactions to such substances as pollen, feathers, hairs, and horse dandruff, and in every case a positive reaction was obtained to one or more of these substances. The author believes that the association of Besnier's prurigo with asthma is not a coincidence and accidental, but that the two manifestations come from one and the same cause. The relation of these two diseases to each other has hitherto been overlooked largely because Besnier's prurigo tends to disappear automatically after childhood.

Obstetrics and Gynaecology.

475. Hyperplasia of the Endometrium.

HAVING studied a series of 66 cases of hyperplasia of the endometrium, E. NOVAK and K. H. MARTZLOFF (*Amer. Journ. Gynecol. and Obstet.*, October, 1924, p. 385) have come to the opinion that it is one of the most important of all endometrial lesions. The condition gives rise to excessive menstruation, both as regards the duration of the period and the amount. Metrorrhagia is not common, but the passage of clots is not unusual. The condition may occur at any age, but is most common about the menopause, when it has to be distinguished from cancer by microscopical examination. Child-bearing seems to have no effect in causing the disease, but when it has developed sterility is the rule, though some exceptions are mentioned. The endometrium may be enormously increased in amount and be polypoid, but equally often it is smooth and of normal thickness. Schröder had suggested that the hyperplasia was due to the absence of corpora lutea in the ovary, but the present authors did not find this to be always the case, and the matter still requires investigation. They add that treatment consists of a diagnostic curettage in the first place; in some cases this may cure the condition. Return of the bleeding after a short interval occurs more commonly, and repeated curettage may be required in young patients when radiotherapy and hysterectomy are undesirable. When the disease occurs after the age of 40 radium is the ideal form of treatment, and hysterectomy is only advised when radium is not available for an intractable case or when the disease is associated with some pelvic lesion which makes laparotomy necessary.

476. Tuberculosis and Pregnancy.

L. SAYÉ, F. CARRERAS, and T. SEIX (*Rev. med. de Barcelona*, September, 1924, p. 227) hold that in dealing with a case of tuberculosis in pregnancy the practitioner must determine the anatomical type of the tuberculous process as soon as possible. If it is a mild form such as pleurisy or fibroid phthisis, hygienic and symptomatic treatment is all that is required. In malignant forms artificial pneumothorax should be performed in unilateral cases, and, if this is not possible, surgical measures, such as section of the phrenic nerve or thoracoplasty, should be considered. In other cases strict sanatorium treatment should be advised, so as to check as far as possible the course of the disease. In view of the strain that pregnancy imposes on the organism the practitioner should warn women with fibroid phthisis to avoid becoming pregnant and inform them of the risks entailed.

477. Pseudo-neoplastic Tuberculosis of the Breast.

ACCORDING to H. HARTMANN, M. RENAUD, and G. D'ALLAINES (*Gynécol. et Obstét.*, 1924, x, 2, p. 81), the rare fibrous form of mammary tuberculosis, which clinically simulates malignant disease, and was first described by Scott in 1904, does not occur except in females. The classic forms are noted most commonly between the ages of 20 and 25; the pseudo-neoplastic form has usually come to operation between the ages of 35 and 60. It is probable that in the absence of histological examination of all breasts amputated for malignant disease, many cases of fibrous tuberculous disease escape detection. The other organs of the patients usually appear healthy; the onset is insidious, and there is little or no pain. The affected breast shows, as a rule, a small, ill defined, slow-growing, hard tumour, which is usually adherent to the skin: the skin may present a "*peau d'orange* appearance," accompanied by retraction of the nipple. Enlargement of the axillary glands is the rule; blood-stained discharge from the nipple was found in Scott's case. The authors add that a diagnosis has never been made prior to examination of the operation specimen; animal inoculations have rarely been employed, but positive results have been obtained in at least two cases.

478. Obstetrics and Radiology.

PORTES and BLANCHE (*Gynécol. et Obstét.*, 1924, x, 5, p. 333) remark that the hopes raised at the end of last century that the *x* rays would be of considerable assistance in obstetrical diagnosis were speedily abandoned; nevertheless, more recent trials have been promising, and the use of more powerful installations and the perfecting of technique will probably in the future lead to wider and more successful use of radiology in obstetrics. Radiography of the foetus removed from the uterus has shown that the first (clavicular and mandibular) centres of ossification are to be seen on the plates at the seventh week, and after the ninth week ossification is visible in all parts of the skeleton. Theoretically, therefore, it ought to be possible, between the end of the second month and the appearance of clinical signs, to diagnose pregnancy by *x*-ray examination; but in practice *x*-ray detection of foetal bones *in utero* is difficult. It has been reported by Edling in 17 cases between 3½ and 4 months; but Barnes and Galloway, repeatedly screening 24 women in the early months of pregnancy, found negative results up to the fifth month, and positive results during that month in 8 cases only. The results of Portes and Blanche have been similar, and they conclude that a radiological diagnosis is possible before a clinical one in very exceptional cases only; a negative plate is of no value up to the fifth month. In the late months radiological diagnosis of twin or triplet pregnancy is of definite value, but the plates call for very careful study. Foetal monstrosities lend themselves to *x*-ray detection, as in a case of anencephaly illustrated by the two authors. In two instances confirmation was obtained of the value of the radiological signs of foetal death *in utero* recently described by O. B. Spalding, the cranial bones overriding each other at their margins, and at the same time the cranial contents appearing more shrunken, in proportion, than the skull. From the few recorded cases it seems probable that maceration of the foetus is associated with disappearance of the opacity of the bones, so that plates taken towards term are negative. Radiological diagnosis of uterine from extra-uterine gestation has not yet been possible. A case of Demelin's is mentioned in which during the ninth month examination of a very swollen abdomen left the diagnosis uncertain between hydramnios and ovarian cyst. The *x*-ray report, verified later at operation, indicated pregnancy and a large ovarian cyst behind the uterus. The authors state that the radiological diagnosis of obstetric presentation and position is, as a rule, comparatively simple even when the clinical examination gives doubtful findings.

Pathology.

479. Active Immunization against Sarcoma.

V. E. MERTENS (*Deut. Zeit. f. Chir.*, October, 1924, 3 bis, 4 Heft, p. 216) states that von Dungern in 1899 taught that it was possible to produce immunity to tissue cells. A few years later W. J. Hoyter (JOURNAL, 1902, ii, 1342) employed expressed serum without the addition of saline solution for malignant growths, with the result that the growth of the tumour was checked for some time, the lymph glands became smaller and the pain less. Hoyter's communication followed Leyden and Blumenthal's paper in which they described how a dog with two tumours of the rectum was treated by a serum from the recently extirpated carcinomatous tumour of another dog, with the result that only a small remnant of the growth remained, which on microscopical examination proved to be an epithelial carcinoma. Mertens now reports the case of a white mare, 14 years of age, with a melanotic sarcoma of the abdominal wall and secondary growths in the rectum and vulva. Repeated subcutaneous injections of an emulsion of the melanotic sarcoma was followed by diminution in size of the primary growth, healing of the ulcers, and diminution in size of the vulvar and rectal tumours, so that their removal was rendered possible. At the same time patches of discoloration appeared in various parts of the skin throughout the body, for which no explanation could be given.

480. The Skin Reaction in Hydatid Disease.

J. GOUDSMIT (*Nederl. Tijdschr. v. Geneesk.*, September 6th, 1924, p. 1235) states that Casoni's intradermo-reaction for hydatid disease is very reliable according to Italian and South American clinicians. Ithurrat found it positive in 133 out of 137 cases, and others found it positive in 84 per cent. The reaction is carried out as follows: Sterile hydatid fluid is used as an antigen. The forearm is prepared by placing on it for a few minutes a swab soaked in alcohol (rubbing should be avoided, because the erythema caused thereby would interfere with the reaction); 1/2 c.cm. of antigen is then injected intradermally. If no change occurs in the skin in a quarter of an hour's time the reaction is negative. If the reaction is positive, a few minutes after the injection an erythema develops round the injection site and rapidly spreads, reaching its greatest development in half an hour. Ten or fifteen minutes after the injection an urticarial wheal appears about the size of a sixpence, and at the end of half an hour becomes converted into an oedematous infiltration. All observers are agreed that the reaction is quite free from any risk. The antigen is prepared as follows: Sterile hydatid fluid is collected in test tubes and kept at the room temperature for five or six days and then carefully examined for aerobic or anaerobic bacteria. If the fluid is turbid it is unfit for use, but if it is clear it is suitable for the test. Goudsmit records three illustrative cases of hydatid disease in which the skin test was positive, while Weinberg's test was negative in one and only feebly positive in another, although the diagnosis of hydatid disease was confirmed in both cases by operation.

481. Alcohol and Bacterial Inhalation.

E. G. STILLMAN (*Journ. of Exper. Med.*, September, 1924, p. 353) finds that in mice exposed to a dense spray containing bacteria in suspension the inhaled organisms penetrate to the smaller bronchi. The further history of the bacteria depends not only upon the kind, number, and invasive quality of the bacteria, but also upon the normal defensive mechanism of the host. The defensive mechanism of the host was in the present instance depressed by alcohol, the average 20 gram mouse becoming completely stupefied within three minutes after an intraperitoneal injection of 1.5 c.cm. of 10 per cent. alcohol in salt solution, and remaining so for three to four hours. The pneumococcus, though highly virulent for normal mice when given intraperitoneally or subcutaneously, rarely gives rise to infection when inhaled, disappearing from the lungs within a few hours. But in alcoholized mice inhaled pneumococci persist in the lungs for a longer time, and frequently invade the blood. In the experiments less than 3 per cent. of the normal mice died of pneumococcus septicaemia, while over 40 per cent. of the intoxicated animals succumbed to fatal blood infection. The author adds that the experiments throw no light on whether the inspired bacteria are killed *in situ*, are taken up by leucocytes, or are carried to other parts of the body. They do not show how the alcohol exerts its harmful effects, or whether alcohol intoxication causes local changes in the permeability of the respiratory mucosa or acts adversely on the systemic resistance. He considers, however, that they show that alcohol delays the removal of inhaled bacteria from the lungs, and favours their invasion of the blood stream.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

482. Sero-prophylaxis of Measles.

S. WOLFF (*Deut. med. Woch.*, November 7th, 1924, p. 1545) records the following incidents to show how effective and lasting may be the prophylaxis of measles induced by injecting the serum of a person who has recovered from measles. In July, 1923, a 2½-year-old child (B. G.) developed measles. In the same family there was another child (H. G.), aged 1 year, who, though left in contact with the case of measles, did not develop it. In May, 1924, a third child (G.), born in the interval and aged only 5 months, had a fairly severe attack of measles. Again the child H. G. failed to contract measles, though exposed to infection. The solution of this riddle of H. G.'s immunity was found when it came to light that H. G. had suffered from severe melaena neonatorum when only 8 days old. An injection of 30 c.cm. of the father's blood had been given, and as the father had suffered from a severe attack of measles in his youth, it would seem that the immunizing bodies created in the father had been transmitted to the infant by parenteral administration. The author points out as a curious fact that this artificial and passive immunity seemed to have lasted a considerable time: the immunity conferred by the injection of the serum of convalescents from measles is generally supposed to be very short-lived. The author suggests that observations such as those recorded point to the feasibility of preventing measles by the injection of the blood of adults who have contracted measles in childhood instead of the blood of children convalescent from measles.

483. DRYER (*Monats. f. Kinderheilk.*, November, 1924, p. 134) records observations on an epidemic of measles in an institution for invalid children under 3 years of age. There were in all seventy children; of the first three who showed symptoms two died, and it was decided at once to give the others injections of the serum of a convalescent (Degwitz's method of prophylaxis). Among invalid children it was very difficult to obtain serum from uncomplicated cases and in sufficient quantity. At first serum from a child of 2 was used and later the mixed serums of two children between 1 and 2 years of age. Blood was drawn from the longitudinal sinus and, after separation of the clot, the serum was used for injection without being further treated. It was given first to those children who were in most danger—two who had developed measles with bronchopneumonia and eight who were suffering from various forms of tuberculosis; the two former both recovered rapidly after the injection, two of the latter did not develop measles, and the others recovered without complications. Finally serum from adults was given to the remaining children, but the quantity available was only sufficient to allow each child 10 c.cm. instead of the 30 c.cm. recommended by Degwitz. Of the children under 9 months, though the chances of infection were the same in their ward as elsewhere, only one developed the disease, so that 10 c.cm. of serum would appear to be almost a sufficient prophylactic dose for children of that age. For those over a year old the dose was insufficient; many developed measles, but in all the course was mild and no children died. The total number of cases was fifty-five, but the only deaths were the two at the beginning.

484. A Fatal Case of Hydrophobia.

F. GÉRARD (*Rev. Tunisienne des Sci. Méd. et Tunis Médical réunis*, August, 1924) records the case of a boy, aged 9, who had been bitten five months previously by a dog that could not be traced and four days later had commenced a course of intensive antirabic treatment (April 28th to May 18th). Four months later, after a severe fright, he was unconscious for some minutes. From that time his mind was dulled, he lost appetite, vomited, and had febrile attacks. For three days before his admission to hospital he ate nothing, and could not be induced to drink: the sight of a glass of water provoked a pharyngeal spasm. On admission scars of bites on the left knee and in the left axilla were quite distinct. In spite of his hyperexcitability he was easily calmed and answered questions, although in a jerky manner. His general condition was good. Although unable to drink, he could swallow his saliva. A current of air or a sudden raising of the bedclothes produced a short spasmodic attack. His respiration was very irregular; several spasmodic contractions of the diaphragm were followed by apnoea for some seconds, and this by a deep sigh. The arm movements were normal, but there was paresis of the right leg, with hyperaesthesia and weak knee-jerks. The left knee-jerk was accentuated, there was a positive Babinski sign on the left side, and the Kernig sign was absent. Lumbar puncture was performed three times without relief. The cerebro-spinal fluid showed marked lymphocytosis: no organisms were found. In spite of sedatives, the patient's condition grew worse, the tendon and superficial reflexes and Babinski's sign disappeared, and the boy died three days later. A necropsy was refused, but the last specimen of cerebro-spinal fluid produced rabies in a guinea-pig. Gérard points out that only one other case (Konradi) has been hitherto recorded of this diagnosis being made by the inoculation test, using cerebro-spinal fluid withdrawn during life.

485. Oesophageal Movements in Health and Disease.

D. DANIÉLOPOLU, D. SIMICI, and C. DIMITRIU (*Journ. de Phys. et de Path. Générale*, July, 1924, p. 595) have studied the movements of the human oesophagus, using an air-filled ampulla communicating with a receiving tambour. A water manometer recorded the pressure within the recording system. It was found that the normal stimulus is distension (bolus); this produces (1) the true reflex of deglutition, and (2) local waves of peristalsis in the oesophageal muscles. They add that oesophageal peristalsis can occur without the production of the deglutition reflex, and that, contrary to the "classical" teaching, the deglutition reflex can be originated by a stimulus at any level of the oesophagus. Though the authors term the local waves "reflex," they do not think that they involve a nerve centre, but that they are produced by the local perioesophageal nerve plexuses. The deglutition waves were found to be much larger than those of the local peristalsis. In the second paper in the same issue (p. 612) the authors report that small intravenous doses of atropine, adrenaline, and of eserine exaggerate, while larger doses diminish, the contractility of the oesophagus. Calcium chloride in any dose only diminishes the excitability. These drugs had less effect on the large waves of deglutition than on the small peristaltic waves. All regions of the tube—pure striated muscle, pure non-striated muscle, or the region where these are mixed—are equally affected. These drugs acted less intensely on the oesophagus than on the stomach. In the third paper (p. 639) the authors report four cases of tetany, organic stenosis, and cardiospasm. In tetany the oesophagus showed hypermotility; this they correlate with the hypertonus characteristic of the "vegetative" system generally in this disease. In stenosis they find the duration of the contractions is greater than the normal: eighteen seconds instead of nine to eleven. In cardiospasm a condition of hypertonicity was observed.

Surgery.

486. Tuberculous Spondylitis.

A. BRÜNING (*Klin. Woch.*, October 14th, 1924, p. 1916) gives a summary of the most important points in the pathology and diagnosis of tuberculous vertebral caries and an account of its treatment. In the early stage the object of treatment should be to give rest to the diseased vertebrae, and an attempt should be made to prevent spinal deformity. With intelligent children rest may be often secured by keeping the child continuously face downwards in bed; the vertebrae are thereby very slightly separated from each other. The best treatment, both for children and adults, is the plaster-of-Paris "bed" or shell, which extends from the neck to the upper part of the thighs. Directions are given for the preparation of this apparatus in a private house. The plaster bed or shell is carefully moulded, especially in the region of the neck and shoulders, and the patient rests on it both by day and night. The diseased vertebrae are protected thereby from all concussion, and the pain soon disappears. After six or nine months, if the pain has ceased, the plaster-of-Paris bed is replaced by a plaster jacket or corset, in which the patient makes the first attempt to walk. After a further six or twelve months this is changed for a cloth corset, but at night the patient usually willingly returns to the old plaster-of-Paris bed. The beneficial effect of sunlight on tuberculous diseases has been demonstrated by Rollier, and in vertebral caries sun baths, or exposures of the body to the direct action of sunlight, have been employed, the head being protected from the sun's rays. These exposures are increased gradually, as regards the area of the body exposed

and the duration of exposure, until the whole body is exposed to the sun's rays for several hours daily. The patient should also spend much time in the open air and should sleep in it. The author recommends the administration of sodium iodide, 5 to 10 grains twice daily.

487. Intracardiac Injections in Stoppage of the Heart.

G. NICOLICH and POTOTSCHNIG (*Rif. Med.*, November 3rd, 1924, p. 1034) report four cases of arrest of the heart's beat during operation treated by intracardiac injection of adrenaline. In the first case, a healthy young man operated on for epididymitis, though the heart had stopped beating for ten minutes, recovery took place after injecting 1 c.cm. of 1 in 1,000 adrenaline; the operation was finished and the patient recovered without any ill effects. In the second case, an old man with malignant disease, whose heart stopped during an operation, was temporarily revived and lived for twelve hours after the injection. In the two other cases (perforated gastric ulcer and tuberculous peritonitis) no effect was obtained. Of all the cardio-kinetics injected adrenaline was found to be the best. The authors advise that the injection should be made in the third or fourth space, and as near the sternum as possible, so as to avoid injuring the pleura—the chief danger, for haemopericardium does not follow puncture. They suggest that it is perhaps immaterial whether the cardiac cavity be reached or not; the adrenaline probably acts on the cardiac nerves. In the second fatal case the myocardium was found to be degenerate, and in the third and fourth to be poisoned by toxins.

488. Gastro-duodenal Ulcers.

P. DUVAL (*Bull. et Mém. Soc. Nat. de Chir.*, October 25th, 1924, p. 908) considers that the diversity of opinion on the correct treatment of perforated gastric and duodenal ulcers is due largely to ignorance of the real cause of the perforation. As a result of investigating a number of cases he believes that the mechanism of perforation is of two kinds. There is first the non-infected and chronic ulcer which suddenly perforates, and, secondly, there is the type of ulcer which may be either acute or chronic, which shows evidence of inflammation, and is always microbic in origin. In the first group perforation is purely mechanical, whilst in the second group it results from infection. The first variety may be simply due to the giving way of a scar without evidence of an inflammatory reaction. In the latter type necrosis or suppuration is present, and infective organisms, usually streptococci, are always found. Some surgeons think that simple suture of the ulcer after perforation will ensure cure, and that gastro-jejunostomy or excision is unnecessary. Duval agrees with this as regards the first group, where the perforation is mechanical and the ulcers appear to heal satisfactorily. In the infected variety he does not find it sufficient, and believes that the ulcer and the infected area surrounding it should be excised. In such cases destruction by the cautery, resection, or even partial gastrectomy, give the best results, the sutures being inserted in non-infected tissues. He considers it possible to determine with the naked eye whether the ulcer is infected or non-infected. Further research is necessary, but there appears to be more oedema in infected cases. The examination of the blood for leucocytosis might assist in forming an opinion.

489. Syphilitic Peritonitis.

S. KORACH (*Deut. med. Woch.*, October 10th, 1924, p. 1402) advances various arguments in support of his hypothesis that when surgeons open the abdomen and find diffuse adhesive indurative peritonitis the condition is often syphilitic. In many of these cases the appendix is very hard to find, being embedded in adhesions, but it is itself the site neither of macroscopic nor microscopic changes, and the diagnosis of chronic appendicitis is not supported by sufficient evidence. To illustrate his hypothesis the author gives a detailed account of a woman, aged 39, who was admitted to hospital suffering from intermittent fever, which resisted antipyretics. The Wassermann reaction was positive, and the temperature fell after a course of mercury. She returned to hospital six months later with fever and rigors, complaining of weakness, insomnia, loss of appetite and weight, and persistent and diffuse abdominal pain. In the right side of the abdomen a tender, slightly movable swelling, of the size of a child's fist, could be seen and felt. Large doses of potassium iodide were prescribed, and the tumour rapidly became smaller. The temperature fell to normal, but as the tumour had not completely disappeared, and the patient complained of attacks of abdominal pain, exploratory laparotomy was performed, and diffuse adhesive indurative peritonitis was found. There was no sign of disease of the gall bladder, stomach, or appendix; the duodenum and liver also appeared to be healthy. The author suggests that in an appreciable number of cases of diffuse adhesive peritonitis much can be done by antisyphilitic treatment.

Therapeutics.

490. Sulfarsenol in Malaria.

L. DURŒUX (*Bruxelles Médical*, November 16th, 1924, p. 92) has treated more than eighty malarial patients with this drug since 1918. Six years ago he began his investigations with various derivatives of "606," and he finds that sulfarsenol is less toxic and more active than any other form, especially in the treatment of malaria. His results have improved since he has given injections at shorter intervals; he now gives: (*a*) a small dose once a day, (*b*) a moderate dose every second day, or (*c*) a large dose each third day. He has kept most of his patients under observation during the last four years. He has found it advisable in chronic cases to repeat the treatment during seasonal changes, especially in October and March, particularly in the case of patients who do not suffer from typical recurrences of malaria, but who are profoundly debilitated, with headache, anorexia, nausea, and slight fever. He reports success in several severe cases of Oriental malaria. In his earlier series (45 cases) the injections were given at longer intervals; there were 6 relapses among the 27 patients who reported subsequently. Among the 37 patients who have received intensive treatment since 1920, 23 have been under observation for three years, and only 2 have had relapses. Almost all of these patients had been treated previously with quinine, either by the mouth or intravenously, but in every case relapses had occurred. Durœux believes that it is possible to prevent relapses by a series of preventive injections when the seasons change.

491. Treatment of Whooping-cough by X Rays.

RALPH D. LEONARD (*Radiological Review*, September–October, 1924, p. 10) has investigated the therapeutic action of *x* rays in this disease during the last two years. He found that a single exposure to *x* rays of patients who had been having ten to fifteen paroxysms during the night reduced the attacks to three or four. Routine *x*-ray treatment was given during the autumn and winter of 1922 to 300 patients. Careful physical examinations and blood cultures were made, and skiagrams of the chest were taken before and after treatment. The ages of the majority ranged from 1 month to 6 years. At first three exposures were given at intervals of forty-eight hours—alternatively over the back and front of the chest. Improvement resulted in at least 75 per cent. of the cases, vomiting being promptly relieved. A year later 20 patients were kept under constant observation: *B. pertussis* was isolated in 6 of them. In addition to stronger dosage, treatment was limited to the roots of the lungs, both front and back. Skiagrams showed that all the patients had marked enlargement of the bronchial glands, and many had peribronchial thickening. About 25 per cent. gave evidence of some localized infiltration or consolidation of lung tissue, but no clinical evidence of pneumonia. After treatment there was a definite diminution in the size of the bronchial glands.

492. Vaccine Treatment of Whooping-cough.

AFTER briefly summarizing the published conclusions of various writers in England, America, Italy, and elsewhere, A. H. MEYER, M. KRISTENSEN, and E. SORENSEN (*Acta Paediatrica*, October 25th, 1924, p. 21) analyse the results obtained by the vaccination treatment of sporadic cases and contacts in the children's wards at the Copenhagen and other Danish hospitals, children's homes, infant asylums, private practice, and during an epidemic in the Faroe Islands. The vaccine was supplied by the Danish State Serum Institute. A forty-eight hours old culture of the Bordet-Gengou bacillus on blood agar was rubbed off with a Pasteur pipette, and an emulsion in 0.5 per cent. phenol saline was prepared. In 1 c.cm. of this emulsion there were 10,000 Bordet-Gengou bacilli. The vaccine was given both prophylactically and therapeutically. The conclusions drawn by the authors from their analysis of this considerable mass of material are that a vaccine prepared from the whooping-cough bacillus has a beneficial effect upon whooping-cough when given early in the disease—that is, up to and including the first week of the convulsive stage—mainly in lessening the severity of the disease. The prophylactic effect is also probably of value, although the extent of actual prevention of disease is more difficult to judge. The varying action of the vaccine in some cases may be due to there being an optimum period for administration, the age of the vaccine, and the possibility of there being various types of bacillus. In whooping-cough the complement fixation test appears only in the third to fourth week, but in three out of six healthy children thus vaccinated the complement fixation test gave maximum readings eight days after the third injection, whereas the test was negative in the three unvaccinated children.

493. Two New Antimony Compounds.

A. RANDALL (*Amer. Journ. Med. Sci.*, November, 1924, p. 728) studied the therapeutic value in cases of granuloma inguinale of two new antimony compounds—sodium antimony thioglycocollate and antimony thioglycocollamide—a triamide of antimony and thioglycocollis, administered intravenously. With a maximum dosage of 0.1 gram every second day rapid cure resulted in all the cases treated, immediate relief of pain after the first injection being noticeable in some. There was no evidence of antimony poisoning, and no such irritative effects occurred at the site of injection as frequently accompany the use of tartar emetic. Five patients intolerant to this latter drug showed complete tolerance to these new compounds. Randall adds that both can also be used intramuscularly, though the sodium antimony thioglycocollate is probably the better of the two. Their possible value in the treatment of syphilis is under investigation, and he thinks that they should prove efficacious in other infectious conditions.

494. Calcium Chloride in Arterial Hypertension.

W. L. T. ADDISON (*Canadian Med. Assoc. Journ.*, November, 1924, p. 1059) records observations of the blood pressure in 13 cases of arterial hypertension, before and after the administration of large doses of calcium chloride. In the case of 7 patients the blood pressure had been under observation for many months before the calcium chloride was given. In the 6 other patients the blood pressure was only ascertained a short time before the treatment commenced. In 5 cases albumin was previously present, and in 4 it disappeared after the calcium chloride. In 3 cases there was a low specific gravity of the urine and comparative intolerance of calcium: as the kidney function improved the calcium tolerance increased. The daily dosage of calcium chloride amounted to 180 grains in 8 cases, to 150 grains daily in 3 cases, to 57 grains daily in 1 case, and to 75 grains daily in 1 case. In all cases the administration of the calcium chloride was followed by a diminution of the blood pressure, systolic and diastolic, and usually this diminution was marked.

Ophthalmology.

495. Standard Backgrounds for Testing Colour Vision.

C. E. FERREE and GERTRUDE RAND (*Amer. Journ. Ophthalmol.*, November, 1924, p. 843) point out the importance of considering the degree of brightness of the surrounding background when making accurate investigations of the fields of vision for colour. They find that the chromatic excitation is inhibited by the achromatic, and that this is more marked in the peripheral field than in the central field. Broadly speaking, when the background is black the fields for the lighter colours, such as green, are smaller (contracted) than when the background is white. The reverse is the case for the darker colours such as red. To obtain uniform results they advise that a grey background should be used of the same brightness as the colour of the test object.

496. Cataract in Dystrophia Myotonica.

W. J. ADIE (*Brit. Journ. Ophthalmol.*, November, 1924, p. 497) draws attention to the prominence of cataract as a feature in dystrophia myotonica. The actual form of the cataract seen in these cases does not appear to be very characteristic or to differ much from early senile cataract. In some cases a star-shaped figure of opacity in the posterior cortex of the lens was reported as being the earliest change. The importance of cataract as a symptom lay rather in the familial aspect, since many patients with the disease fully developed were found to have relations, otherwise in good health, who had presenile cataract. Presenile cataract was often found in the generation preceding the one in which the disease was fully developed.

497. Progress of Senile Cataract under Hygienic Care.

E. JACKSON (*Amer. Journ. Ophthalmol.*, October, 1924, p. 775) bases his paper upon the examination of the notes of 593 cases of patients who showed senile lenticular changes. His statistics show that quite a fair proportion of the cases retained useful vision, and that in a few cases vision actually improved. He points out how impossible it is to forecast the rate of development of the cataract, and that therefore it is impossible to estimate the value of the many so-called medical treatments of cataract. Lenticular opacities certainly clear up spontaneously on occasion. With regard to the hygienic care of these cases he suggests: (1) Avoidance of eye-strain by proper change of glasses whenever required, good illumination, and reasonable limitation of close eyework. (2) Preservation of good general health and the taking of sufficient water in the daily diet. (3) Proper treatment of ocular diseases, especially those of the uveal tract, which may be associated with the lenticular opacities.

Obstetrics and Gynaecology.

498. Toxaemias of Pregnancy.

R. C. CHENEY (*Journ. Amer. Med. Assoc.*, November 1st, 1924, p. 1383), in discussing the toxaemias of pregnancy from the ophthalmological standpoint, remarks that while fundus changes are usually only found in the graver cases they sometimes commence quite early, and may afford valuable guidance in connexion with etiology, prognosis, and the advisability of allowing the pregnancy to continue. Routine examination of the fundus in carefully grouped cases should give interesting information as to whether certain changes are characteristic of certain types of toxaemia. Though occurring usually in the later three months of pregnancy, fundus changes have been reported as early as the third month, and recurrences in succeeding pregnancies are rare. Cheney thinks that pregnancy should be terminated when a retinitis develops before the last fortnight or so. These fundus changes in acute toxaemia of pregnancy may range from a few retinal haemorrhages to the classical picture of albuminuric retinitis. Separation of the retina may occur, the retinitis being an acute toxic condition due to retinal ischaemia rather than to vascular conditions, whereas in chronic nephritis the retinitis shows more vascular changes, such as narrowing of vessels, increased light streak, and tortuosity. Though theoretically this should afford a means of distinguishing between the two conditions, Cheney thinks that this is practically impossible in the majority of cases where a pre-existing nephritis was not of sufficient severity to cause vascular changes, and so the sudden flaring up of the nephritis, due to the extra strain of pregnancy, shows more the acute toxic type of fundus. Statistics indicate, however, that when retinitis is present the chances are four to one that the patient has nephritis.

499. Inflammatory Carcinoma of the Breast.

B. J. LEE and N. E. TANNENBAUM (*Surg., Gynecol. and Obstet.*, November, 1924, p. 580) describe 28 cases of inflammatory carcinoma, which is held to be a distinct clinical phase of carcinoma of the breast, of any histo-pathological type, apparently identical with the lactation cancer, acute medullary or encephaloid carcinoma, and acute brawny cancer of other writers. It represents 1.3 per cent. of mammary carcinomata, and frequently takes a fulminating course. The authors have not observed it in pregnancy or the puerperium. Ten of the patients were aged 39 or less, the average age for the whole group being 44.6; in fourteen there had been no lactation and all had pendulous breasts. In the early stages diffuse enlargement without defined tumour formation was common. The inflammatory reddening and brawniness of the overlying skin may extend far beyond the normal limits of the mammary gland. Glandular involvement, including supraclavicular adenopathy, was well marked and early; in the late stages the nipple was retracted and sometimes oedematous. As a rule, there was little pyrexia. The authors add that the condition has been diagnosed erroneously as mammary abscess, erysipelas, or radiation erythema; but they think the inflammatory appearances are characteristic. Microscopically the most striking change was a wide invasion of the dermal lymphatics by carcinoma. They consider that the prognosis is extremely grave: cases treated surgically do badly, and at present radiation treatment is said to offer the only hope of palliation.

500. Double Uterus.

M. GUILLEMINET and L. MICHON (*Gynécol. et Obstét.*, 1924, x, 3, p. 145) summarize 48 cases of double uterus recorded in the literature antecedent to 1912, and give full reports of ten hitherto unpublished cases. They emphasize the difficulty of exact diagnosis, even at operation, and its great importance. Recognition of duplicity of the genital organs, they point out, may enable conservative measures to be applied successfully. The authors add that anatomical study has shown that the uterine arteries remain normal, both in number and in course, so that the inner border of the hemiuterus is avascular. In a large number of cases they found that the pelvic peritoneum showed a well marked vesico-rectal serous septum which might even extend to the pelvic colon; the detection of this at an operation should lead to suspicion that the uterus may exhibit congenital abnormality. The abnormality most commonly detected by clinical examination, which must include careful inspection as well as palpation, was double vagina; the vaginal septum may be small and to be detected only at the superior extremity. The authors point out that duplicity of the uterus is most commonly recognized after the occurrence of haematometra in one uterus, utero-adnexal infection, tumour formation in a uterus or one of the adnexas, or pregnancy—a frequent event in spite of the malformation. Of these complications,

it is only in haematometra or pregnancy that a preoperative diagnosis is sometimes possible; if in the former case the collection of blood is unilateral, the persistence of menstrual discharges from the other side is deceptive. In 19 cases mentioned by the authors in which conservative treatment of the double uterus was practised, menstruation continued, and eleven of the patients had one or more subsequent pregnancies terminated naturally or by Caesarean section.

501. Treatment of Bartholinitis.

H. SIEBER (*Zentralbl. f. Gynäk.*, September 27th, 1924, p. 2126) states that in his experience infection of one or both Bartholin glands occurs in three out of four of all cases of female gonorrhoea. He criticizes the usual methods of treatment, pointing out that injections of protargol, etc., damage the epithelium; that extirpation of the gland abolishes the secretion; and that Bier's congestion and vaccine therapy are not always successful. He suggests *x* rays, and describes in detail a case in which such treatment was successful. Several applications were made until the secretion became bacteriologically negative. No recurrence took place.

Pathology.

502. Fusiform Bacilli and Spirochaetes in Pulmonary Infections.

I. PILOT and D. J. DAVIS (*Arch. Intern. Med.*, September, 1924, p. 313) present as a clinical entity a group of obscure pulmonary infections, characterized by abscess formation and gangrene. In the sputum and tissues were found, by anaerobic culture, fusiform bacilli and actively motile Gram-negative spirochaetes, resembling in morphology *Spirochaeta vincenti*, *macrodentium*, and *microdentium*. Associated with these *Streptococcus viridans* was often present, and *Streptococcus haemolyticus* occasionally, but most constantly in the fatal cases. These organisms are normally present about the tonsils and teeth, and their mode of infection is readily understood where aspiration is a factor. After general anaesthesia, tonsillectomy, and perforating lesions, the secretions of the mouth rapidly give rise to pathological changes in the lungs. The lesions due to these organisms are of a great variety, depending to a large extent on the resistance of the patient and the behaviour of the pathological process. In all the tendency to necrosis and the production of a foul-smelling lesion are the striking characteristics. The simplest lesion occurs in the form of a putrid bronchitis. A more commonly seen lesion is that of a bronchopneumonia consolidation in any lobe, with formation of a single abscess cavity. Of great interest is the diffuse form of gangrene, which represents the action of the anaerobes at their highest pathogenic power. The blood vessels in the more extensive processes are filled with thrombi which may be rich in bacteria clumps made up of fusiform bacilli, spirochaetes, and cocci; such thrombi are probably the source of metastatic lesions in the brain. Acute and chronic forms of the infection occur. Both abscess and gangrene may develop rapidly; cough, pyrexia, and foul-smelling expectoration with the causal organisms are characteristic. Abscesses may be simple or multiple, and recovery is frequent. Acute gangrene ends fatally in two or more weeks. In bronchiectasis the symptoms may extend over a period of many years. In treatment neo-arsphenamin has given encouraging results in doses of 0.3 to 0.9 gram, administered once a week; the most favourable results are obtained in early cases. Surgical measures may be necessary. The prevention of these pulmonary infections lies in the proper hygiene of the mouth.

503. The Haemoclasic Crisis and Hepatic Function.

P. S. COSTA (*Pensiero medico*, August 10th and 20th, 1924) states that under the name of "haemoclasic crisis" Widal has described a number of haematological and vascular reactions, of which the most important are leucopenia and a fall of blood pressure, which occur after passage into the blood of certain heterogeneous substances. As the result of his own observations Costa comes to the following conclusions: (1) It is rare to find all the elements of the haemoclasic crisis present at the same time, but they may appear independently of one another. (2) The test cannot be regarded as positive merely because there is a post-digestive leucopenia or a fall of blood pressure or any other isolated phenomenon, because these symptoms may be a consequence of shock. (3) A variety of factors may give rise to phenomena indistinguishable from the haemoclasic crisis. (4) Some of the phenomena characteristic of the haemoclasic crisis appear in subjects whose liver is undoubtedly normal; nor can this circumstance be explained by the hypothesis of a latent hepatic disorder, because the phenomena are seen not only after ingestion of sugar but also after swallowing plain water, in which case it is impossible to speak of colloidoclasic phenomena. (5) In subjects in whom there is obvious derangement of the hepatic function the test often gives negative results; and although Widal tries to explain this by the contention that there is still a part of the hepatic parenchyma which takes on a vicarious function, this hypothesis is in flagrant contradiction with the preceding view, since it is difficult to understand how the same test can indicate a latent hepatic disorder. (6) Sometimes, especially in cases where only one or two components of the test are present, the test, if repeated after an interval of only one day, yields a different result, although the state of the liver according to clinical and laboratory data remains the same. (7) The test is based on the normal processes of digestion and absorption; and since it is often impossible to express a definite opinion as to the condition of the gastro-intestinal canal the test loses much of its value. (8) The results obtained in children should be regarded with caution, since digestive leucopenia is the rule at this age, even after small quantities of milk. The same applies to pregnant women.

504. Action of Papaverine on the Human Stomach.

D. DANIÉLOPOLU, D. SIMICI, and C. DIMITRIU (*Arch. Internat. Pharmacodyn. et de Thérap.*, vol. xxix, 1924, p. 471) quote the statement in the textbooks that papaverine paralyses unstriped muscle. Various observers have found inhibition of muscular contraction in the bronchi, uterus, etc. La Fèvre de Arric reported that the contractions of the stomach in dogs were weakened by papaverine; passage of food through the small intestine was also retarded, but this was not associated with intestinal paralysis. The intestinal lumen was diminished and occasionally violent but ineffectual contractions were seen. According to this investigator the intestinal action of papaverine is similar to that of morphine. Hitherto all observations of its action on the human stomach have been clinical and radiological; the three authors, regarding these methods as unsatisfactory, have employed the method of moderate inflation of the stomach by means of a rubber bag connected with a lever and a recording cylinder. Moderate distension is most important since over-distension causes tetanic contractions followed by paralysis. In every experiment papaverine (1 to 3 cg.) was injected intravenously, the subjects being healthy young adults. The authors found that papaverine acting on the human stomach produced hypermotility followed by paralysis. They add that the effects of papaverine are produced more rapidly when the gastric motility is increased. They consider that their researches indicate that the intravenous injection of papaverine in a certain dose excites gastric contractions, and that that is its only primary effect. The phase of paralysis is apparently the inevitable result of the phase of stimulation; this is analogous to the effects of stimulation of the vagus. Some time after vagal stimulation has ceased the stomach contracts more and more strongly and finally enters the stage of tetanic contraction. Papaverine increases the excitability of the gastric muscle producing the first phase of increased contraction and "semitetanus." If papaverine be injected during the phase of paralysis it produces no effect, nor has it any effect if injected during paralysis produced by vagal compression.

505. Antirachitic Action of Light.

A. F. HESS (*Amer. Journ. Dis. of Children*, October, 1924, p. 517) reports the results of experiments devised to ascertain whether the treatment of inert substances with the rays of the mercury-vapour lamp could endow them with antirachitic properties. He found that cotton-seed oil, when exposed for an hour to these rays at a distance of one foot, had acquired antirachitic potency. The irradiated oil was given as food to young rats in the amounts of 0.1 and 0.25 c.cm. daily, the control animals receiving non-irradiated oil; all the animals were fed on a standard rickets-producing dietary. Linseed oil, tried as an alternative to cotton-seed oil, was found equally suitable, but mineral oil after irradiation developed no antirachitic properties. Such properties were also absent from fluids, including linseed oil, containing radium, hydrogen peroxide, and ozonated water, none of which had any protective potency for rickets. The irradiated oils with antirachitic properties were found to be unaltered as regards their content of unsaturated fatty acid, although the total acidity had somewhat increased. The colour was slightly bleached and a rather fishy odour was acquired, resembling that of cod-liver oil. The author is at present studying the question whether the antirachitic potency of such substances as cod-liver oil can be improved by treatment with ultra-violet rays.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

506. Rickets.

E. T. WYMAN and C. A. WEYMULLER (*Journ. Amer. Med. Assoc.*, November 8th, 1924, p. 1479) state that rickets is the most widespread infantile nutritional disorder of temperate climates. In a group of 400 babies, aged 3 to 8 months, in the out-patient department of the Boston Children's Hospital, skiagrams and careful examination showed that 95 per cent. of all these babies, and 100 per cent. of the Italian and negro babies, had either active or healed rickets before the age of 8 months. During the winter all the babies showed some evidence of rickets; the "rickety rosary" was found the most trustworthy sign, skiagrams in early cases proving unreliable. Since 1919 numerous observers have reported that ultra-violet rays in doses approaching the limit of tolerance will cure rickets and tetany in the absence of any other treatment. In 1923 the authors organized a special clinic at the Boston Children's Hospital, and during the last year 86 patients were treated with ultra-violet rays three times in each week, six normal children, used as controls, receiving the same treatment during a period of two months. Skiagrams of the wrists with palms upward were taken every ten or twelve days, and the calcium and phosphorus in the blood plasma were estimated. The lamp was placed 20 inches from the skin surface, and the initial exposures continued for two minutes to the front and two minutes to the back of the body. These times were increased by one minute at each sitting until a total of thirty minutes was reached. No undue erythema occurred even in the most delicate skins. No cod-liver oil or medicine was given, but an ordinary antirachitic diet was prescribed. All these 86 patients with acute rickets showed steady improvement, and gained weight without change of food. The improvement was so definite that the parents willingly brought the children three times a week to the clinic, often from a considerable distance. Skiagrams showed increased calcium deposit at the end of two weeks, but the improvement was much more marked when the longer exposures were being given. In all patients whose blood was examined before the commencement of treatment a low concentration of serum phosphorus was found, and in those children who had both tetany and rickets there was also a low calcium figure. During the treatment both concentrations reached the normal in two weeks. Full details of 4 cases, with numerous skiagrams, are given.

507. Internal Secretions and Skin Diseases.

J. S. COVISA and J. BEJARANO (*Arch. de med., cir. y esp.*, October 25th, 1924, p. 145) state that proved cases indicating some relationship between diseases of the skin and endocrine changes are as rare as the hypotheses based on a supposed relationship are numerous. They maintain that the only instances in which a connexion has been definitely established between affections of the endocrine glands and dermatoses are as follows. In the first place, in a large percentage of cases of acro-asphyxia, chilblains, erythema induratum (Bazin), angiokeratoma (Mibelli), scrofuloderma, and the other dermatoses which constitute the large group of tuberculides, there is a more or less pronounced but almost always obvious condition of thyroid insufficiency, which is manifested by a constant feeling of chilliness, infiltration of the skin of the face, loss of hair, etc. The most striking example of this group is illustrated by the skin changes in myxoedema. The authors have found that in many cases of tuberculides opotherapy has a very favourable action, as it shortens the course of the disease, prevents the occurrence of secondary infections of the skin, and causes a disappearance of the general symptoms of hypothyroidism which accompany these dermatoses. In the second place, a relationship has been established between many changes in pigmentation, principally with states of suprarenal insufficiency, and to a less extent with changes in the thyroid, hypophysis, and ovaries. Baliña has shown that adrenaline causes a rapid disappearance of pigmentary syphilides, which, as is well known, are refractory to antisyphilitic treatment and sometimes remain unchanged for years. Lastly, the authors say that there is an indisputable relationship between many cases of acne with changes in the thyroid, especially increased activity of that gland. Their experience differs from that of Levi and Rothchild, who found that acne was often associated with hypothyroidism.

508. Dextrocardia in Twins.

C. PEZZI and L. CARUGATI (*Cuore e Circolazione*, October, 1924, p. 361) record a probably unique case of cardio-visceral transposition in twins who had reached the age of 25 years. There was no family history of heart disease. The father had died of gastric cancer at the age of 59, and the mother of pulmonary tuberculosis at 35. One sister, aged 29, was in an asylum with dementia praecox, while another sister, aged 27, and a brother, aged 21, were alive and healthy. Before the war, when the condition was first discovered, neither of the twins had had any illnesses worth mentioning. Both had taken part in the front-line fighting. The condition was detected in one twin during an attack of malaria, when the liver dullness on the left was at first mistaken for splenic enlargement. Skiagrams in both cases showed that the heart was on the right side, while the liver occupied the left hypochondrium, and the stomach was on the right. Although it was impossible to affirm that the transposition of viscera was complete, because the *x* rays could not demonstrate inversion of certain viscera, such as the lungs, it was probable that the transposition involved other organs, such as the intestine, as was found by De Castro in two out of three cases. The electro-cardiogram in the present authors' two cases was characteristic in each instance. In the first deflection the tracing was that of a normal subject but reversed, while in the second and third deflections the curves were normal—with this difference, that the second deflection corresponded to the third of a normal subject, and the third to the second. As regards the pathogenesis of transposition of viscera, the authors accept the views of Martinotti and Lochte. Martinotti has shown that normally the left omphalo-mesenteric vein is more developed than the right, which disappears rapidly, and on this asymmetry depends the development of the organs, especially the liver, stomach, and spleen. Persistence of the right omphalo-mesenteric vein and disappearance of the left produces transposition of the viscera and secondary rotation of the heart, though the latter is not inevitable like inversion of the abdominal viscera. Lochte attaches considerable importance to the umbilical veins, which are closely connected with the omphalo-mesenteric veins and undergo a similar evolution, normally the left only persisting, while the right disappears. On the other hand, when the right umbilical vein persists, the omphalo-mesenteric vein, or future portal vein, will pass to the left side of the foetus, and the liver will develop in this situation, the greater curvature of the stomach being found on the right.

Surgery.

509. Diverticula of the Bladder.

M. NEGRO and H. BLANC (*Journ. d'Urol.*, September, 1924, p. 217), from a study of thirteen cases of diverticula of the bladder, draw the following conclusions. Diverticula are usually met with after 40 years of age, though they are not rare in younger subjects; the authors report three cases occurring before this age. They are occasionally present in females, two being found in women among their cases. The diverticula are more commonly placed on the lateral walls of the bladder; the size varies from that of a nut to that of a large orange. Two of the largest were discovered in patients of 24 and 32 years of age respectively. Multiple diverticula are more often found than single ones. The multiplicity appears to vary inversely with the size, for the large ones are usually single. Diverticula do not give rise to any special symptoms. The only pathognomonic sign appears to be micturition in two stages, and this is found very occasionally. Other symptoms are cystitis and haematuria, and in one case there was acute retention with acute unilateral pyelonephritis. As regards complications, there were two cases with calculi in the diverticula and one case with papilloma. The authors regard the cystoscope as essential in making the diagnosis. It gives information as to the number, position, and location of the diverticula openings; but it is not always sufficient, and cysto-radiography is useful in these cases. By this means calculi in the diverticulum, invisible by cystoscopy, can be detected. As to treatment, palliative means are said to be useless in getting rid of the infection or other complications present. The authors found surgical treatment only of any avail, and they describe the various procedures that have been adopted.

510. Spontaneous Gangrene of the Lower Extremities.

F. KAZDA (*Deut. Zeit. f. Chir.*, August, 1924, p. 86) states that the causes of spontaneous gangrene have been classified by Israel as follows: (1) Deficient supply of normal blood, as in arterio-sclerosis and endarteritis obliterans; (2) normal supply of abnormal blood, as in gangrene of the extremities after infectious diseases; (3) deficient supply of abnormal blood, as in diabetic gangrene. Apart from diabetic gangrene, Kazda distinguishes two forms of spontaneous gangrene. The first form occurs in young or middle-aged persons who are affected with more or less pure forms of angiospasm and endarteritis obliterans. The prodromal symptoms, which often last for years, especially when both legs are affected, may be very violent. Finally, the gangrene develops rapidly and involves segments of the peripheral parts of the extremities. A segment of a toe, one or several toes, or a portion of the foot becomes discoloured, the pain being extremely severe. The second form occurs in older persons with very pronounced arterio-sclerosis. Prodromal symptoms are absent or slight and of short duration. The pain is much less severe than in the first form, the gangrene commences slowly, usually from an ulcer, and extends peripherally from it and not in a segmental manner. The first form of gangrene is much the more frequent—Kazda saw 37 cases in men and 13 in women of the first form, as compared with 16 in men and 2 in women of the second form. The average duration of the prodromal symptoms of the first form in men is one year and two months when one leg only is affected, and five years and two months when both legs are involved, and in women two years and eight months. The duration of the prodromal symptoms in the second form never exceeds two months. In the first group conservative treatment is always unsuccessful, and primary operation is required; whereas in the second group conservative treatment is indicated. In diabetic gangrene conservative treatment should be attempted only in the mildest cases, which may be classified in the second group. In all other cases amputation of the thigh should be performed, even if there is no coma. Surgical measures should be accompanied by medical treatment of diabetes. The prognosis is always doubtful.

511. Chronic Ethmoiditis and Asthma.

HUMBLÉ (*Bruxelles Médical*, October 19th, 1924, p. 1459) reports the case of a night watchman, aged 55, who had suffered from asthma and bronchitis for ten years or more. After the removal of some nasal polypi some years ago he was temporarily relieved, but the attacks of asthma recurred, associated with severe bronchitis. Humblé removed the nasal polypi with a cold snare, and also paid attention to some bad teeth and to the dyspepsia. A few weeks later he proceeded to clear out the ethmoidal cells, having first ascertained that the sinuses were free from disease. The removal of these cells gave complete relief, and the author suggests that the asthma was a spasmodic reflex due to the irritation of nerve filaments by the chronic ethmoiditis.

512. Ascariasis and Acute Pancreatitis.

W. PFANNER (*Deut. Zeit. f. Chir.*, August, 1924, p. 125) states that the increase of intestinal parasites during and after the war has frequently given rise to conditions requiring surgical interference. Invasion of the bile ducts or liver by ascarides is a severe and dangerous disease, which becomes one of exceptional gravity when secondary changes in the pancreas ensue. Pfanner records two fatal cases in men aged 44 and 54, in whom invasion of the bile ducts by round-worms had not only caused the usual cholangitis, but had also led to severe acute suppurative pancreatitis. The onset of the disease was not characteristic in either patient, but resembled that of other cases of ascariasis of the bile ducts, and the possibility of the invasion of the common bile duct or pancreatic ducts was not considered. In the first case the possibility of cholecystitis with cholangitis was entertained, while in the second case the onset suggested gastric or duodenal perforation. In the first case operation showed acute inflammation of the bile ducts, which contained extremely fetid bile infected with *B. coli*. In spite of cholecystectomy and drainage of the common bile duct signs of acute pancreatitis developed in a few days and death took place. The pancreatic duct at the autopsy was much dilated and filled with an adult *Ascaris lumbricoides*, and multiple punctiform haemorrhages and areas of fat necrosis were found in the pancreas. In the second case, in which death took place before operation, the autopsy showed early peritonitis and all the signs of acute pancreatitis. A pair of ascarides was found in the common bile duct, with their heads towards the hepatic duct and their tails projecting from the papilla of Vater. Twenty more fully developed ascarides were found in the stomach and duodenum.

Therapeutics.

513. Caffeine in Epilepsy.

P. KARGER (*Deut. med. Woch.*, November 7th, 1924, p. 1531) states that he began to substitute stimulants for sedatives in the treatment of epilepsy with some scepticism, although the recent work of Stargardter had made out a plausible case for this change. But the author's experience during the past three years with more than 60 cases has convinced him that caffeine may be remarkably effective in a considerable proportion of cases. With the exception of ten patients, in whom the attacks were comparatively serious, his material consisted of patients suffering from petit mal, associated in most cases with enuresis. In every case a definite connexion was established between the attacks, and tiredness and sleep. At first caffeine was given only to those children in whom the attacks began on getting up or going to sleep, in the night, or towards the end of school hours. The ages of the children ranged from 3 to 13 years, and, in order to eliminate suggestion as a factor in the treatment, tinctura amara was at first given for some days: it had no effect. Caffeine was then prescribed. When the attacks used to occur in the morning only the caffeine was given before rising. The dosage and the spacing of the doses were modified according to the requirements of the individual; it was found advisable to continue the treatment for two to three months after the symptoms had disappeared and to discontinue the treatment gradually. No harm was done, and there were only three cases in which this treatment was ineffective. In no case did the drug interfere with sleep, and in most cases the duration of the cure was considerable.

514. Camphor in Bacteriaemia.

E. JARLÖV (*Acta Med. Scand.*, Supplement VII, 1924, p. 57) states that it has long been known that the growth of pneumococci is arrested in as dilute a solution of camphor as 1 in 10,000. Oil of camphor has been found unsuitable for subcutaneous injection because it is absorbed so slowly, and it is unsuited for intravenous injection because of the risk of fat embolism. The investigations of Leo have shown that camphor is not so insoluble in water as it was thought to be, and, on Leo's prompting, the author has given intravenous injections of camphor in several cases of bacteriaemia. Using a solution of 15 cg. of camphor in 125 c.cm. of water, the author gave from 150 to 500 c.cm. or more to adults at one injection. Each injection took from fifteen to twenty minutes, and in several cases one injection was given every day for a short period. Among the numerous cases recorded by the author there was one of septic fever in a man, aged 21, who did not respond satisfactorily to injections of collargol. On three successive days he was given 250 c.cm. of the solution of camphor; after the second injection the temperature fell to normal, and he was discharged from hospital much improved. In a case of pneumonia, in a woman aged 29, the injection of as great a quantity as 400 c.cm. of the solution of camphor was immediately followed by a rigor, the temperature rising to 104° F., but she soon felt much better. When, at a later date, 75 cg. of camphor were injected in the course of about fifteen minutes, a rigor again developed, and the temperature rose to 103° F.; a few hours later she felt perfectly well and she made a complete recovery. In a case of severe puerperal sepsis as much as 90 cg. of camphor was given in about fifteen minutes, and this dose was so large that the patient was rendered almost unconscious by it for a few seconds. But neither in this nor in any other case did the injections inflict any permanent injury, and the author concludes that camphor, given in this way, is a very effective remedy for a great variety of blood infections. He adds that it is not only a stimulant, promoting the functions of the vascular and respiratory systems, but it is also a powerful internal antiseptic.

515. Atropine Sulphate in Acute Mania.

A. POPEA, L. CONSTANTINESCO, and GIURGIU (*Bull. et Mém. Soc. Méd. des Hôp. de Bucarest*, September, 1924, p. 188) have studied the vago-sympathetic system in mental disease, with or without pathological lesions, using Daniélopolu's atropine test. They have discovered that atropine sulphate has a specific action when injected intravenously in doses sufficiently large to paralyse the vagus, especially in cases of maniacal excitement. When the dose was sufficient to accelerate the heart, and to produce mydriasis, maniacal patients became less talkative and excitable; they grew drowsy and more amenable to control. In twenty cases, as soon as the test was completed, all the patients slept for three to eight hours, with the exception of two patients, who were drowsy but did not actually sleep; one other patient, a general paralytic suffering from maniacal excitement, was not calmed. These patients awoke without the disturbance

that usually follows the administration of hypnotics, especially of opiates, and the psychomotor disturbance was definitely less. At the end of twenty-four to forty-eight hours the patients began to return to the maniacal state, but for many nights after the injection of atropine they slept naturally. The authors consider that these facts appear to throw light on some obscure points in the pharmacodynamic action of atropine, and cite the following authorities. Manquat states that atropine is not hypnotic in the usual sense; it only produces sleep when given in massive doses, its action appearing to be the first stage of the coma which supervenes when a toxic dose is given. According to Pauchet, however, it is a valuable soporific in disease, and Soulier reports that while belladonna stimulates normal nerve cells it calms those which are functionally deranged. Furthermore, Radovici and Nicolesco have described a hypnotic action of atropine in patients suffering from epidemic encephalitis. The present authors confirm that view, and show that the sedative and hypnotic effect of atropine corresponds with its paralysing action on the vagus. The interdependence of these two effects has yet to be verified, and it must be remembered that, according to Tinel, Santenoise, and others, maniacal excitement is always preceded, if not produced, by a state of vagotonia. If the two phenomena are connected the present authors think that the origin of conditions of excitement, and especially of maniacal symptoms, may be due to hypertonia, or hyperexcitability of the pneumogastric, which gives rise to attacks of maniacal excitement by cerebral irritation. Sleep supervening after the calm produced by atropine would then be due to fatigue resulting from the previous excitement.

Anaesthetics.

516. Local Anaesthesia in Cataract Operations.

J. MATHEWS ROBISON (*Arch. of Ophthalmol.*, November, 1924 p. 570) describes in detail the various methods of anaesthetizing the nerves supplying the lids recommended by various authorities in connexion with cataract operations. He has devised a technique of his own by repeated experiments. The points which he particularly emphasizes are the necessity of paralysing not only the orbicularis oculi, but also the accessory muscles affecting the closure of the lids—namely, the corrugator supercilii and the angular head of the quadratus labii superioris—and also the advisability of producing complete anaesthesia as well as paresis of the lids. To ensure this latter it is necessary to block the supraorbital, the supratrochlear and infratrochlear, the infraorbital, and the lacrymal nerves.

517. Gas-Oxygen Anaesthesia.

E. I. MCKESSON (*Journ. Amer. Med. Assoc.*, November 8th, 1924, p. 1502) discusses the advantages gained by using pure gas-oxygen anaesthesia in ear, nose, and throat surgery. He points out that the coagulation time of the blood is shortened, and that under general pressure narcosis is made perfectly safe for patients with obstructive complications, such as quinsy or tumours. Moreover, the danger of inspiration of pus, blood, and infectious material appears to be diminished. He has encountered no pulmonary abscesses, nor pneumonia, as sequels, and no deaths. He considers the sitting posture preferable for operations. He reports difficulty in obtaining the abolition of the pharyngeal reflex unless morphine is also employed, and a second objection is the requirement of a special apparatus.

518. Colonic Anaesthesia.

H. W. MEYER and B. F. ROBBIN (*Journ. Amer. Med. Assoc.*, November 15th, 1924, p. 1581) sketch the history of colonic anaesthesia in a short preliminary note, and then point out the indications for this form of narcosis as being (1) obesity, (2) hyperthyroidism, and (3) operations about the head, neck, and thorax. Old age is not considered a contraindication, but intestinal disease, advanced nephritis, and diabetes prohibit its use. As in other forms of anaesthesia, the usual care before, during, and after induction must be exercised. The colon is emptied forty-eight hours before operation, and after twelve hours a soap and water enema is given. About three to four hours before the operation a tap-water enema is given, and an hour and a quarter before operation a suppository is introduced containing 10 grains of trichlor-tertiary-butyl-alcohol and a hypodermic injection of 1/6 to 1/4 grain of morphine with atropine is given. One hour before operation the ether oil mixture is introduced gradually into the rectum; the rectal tube is left in position, and is closed with a clamp. Surgical anaesthesia may be expected after forty-five minutes. The standard formula used is ether 4 oz., paraldehyde 2 drachms. and olive oil 2 oz. If signs of danger appear during operation, opening the rectal tube and pressure over the sigmoid, followed by irrigation, are said to remedy the condition quickly. Post-operative procedure includes colonic irrigation followed by a hot coffee enema; morphine should be withheld until the patient is fully awake. The method is stated to be a very safe one, and to obviate post-operative pneumonia after protracted operations.

519. Resuscitation by Direct Cardiac Massage.

W. E. LEES and T. M. DOWNS (*Annals of Surgery*, October, 1924, p. 555) call attention to the efficiency of cardiac massage in re-establishing heart action after arrest during anaesthesia. They emphasize the simplicity of the procedure and suggest that restorative measures are not exhausted until direct cardiac massage has been tried. The number of recorded cases in which this has been successful is about 25 per cent. They state that artificial respiration is most important in conjunction with cardiac massage, which must be started early, within two or three minutes of the cessation of the heart beat; after an interval of ten minutes it is seldom successful. Time should not be wasted in hypodermic stimulation, which cannot act if the circulation has stopped. The abdominal subdiaphragmatic method is usually employed, and is easy and quick. Through an abdominal incision the heart is rhythmically squeezed against the chest wall. If the heart is not restored to activity in two minutes the diaphragm should be incised and direct stimulation tried. The authors consider that the intraventricular administration of adrenaline, as advocated by Crile, will be more certain and efficient in its action if combined with cardiac massage. When the heart has ceased to beat it is doubtful whether anything except direct massage will restore its action.

Obstetrics and Gynaecology.

520. Incontinence of Urine.

C. J. MILLER (*Amer. Journ. Gynecol. and Obstet.*, October, 1924, p. 492) states that incontinence of urine is a common occurrence in women and usually follows injuries sustained at labour, though sphincteric weakness may be responsible in some nulliparous cases. In 1,000 gynaecological cases collected by Taylor and Watt control of urine was found to be normal in 79.4 per cent. and fair in 6.8 per cent.; thus in 13.8 per cent. there was poor control or incontinence. Multiparity increased the frequency of incontinence, and 45 per cent. of patients with prolapse were affected. Miller considers that the cause is doubtful, but is probably an injury of the vesico-vaginal fascia, which, according to Taylor, allows the inferior wall of the urethra to sag. This tends to drag on the sphincter urethrae and to hold it open; the sphincter itself is rarely injured. In these patients the perineum is usually shallow and the anterior vaginal wall bulges on straining. Many ingenious methods of treatment had been devised for this condition, but failed owing to misconception of the cause of the incontinence. The author remarks that modern methods consist in the tightening of the fascia around the vesical neck without attempting to narrow the sphincter, and that these have been eminently successful, especially when Clark's U suture was used to give immediate and later permanent support to the urethra and vesical neck. An anterior colporrhaphy is required in nearly all cases to complete the readjustment of the whole fascial sheath. In cases unsuited for operation he finds that pessary treatment, preferably the ring pessary, has proved very efficacious, at any rate in the milder type of incontinence, for the weakened fascia is supported and sagging prevented.

521. Operative Treatment of Carcinoma of the Uterus.

ACCORDING to an analysis by A. GRISI (*Ann. di Ostet. e Ginecol.*, October 31st, 1924, p. 463) of the statistics of the Milan Obstetric and Gynaecological Institute, the prognosis in carcinoma of the body of the uterus is less favourable than has recently been stated. During the last fourteen years 84 cases have been operated on, 46 by the vaginal and 38 by the abdominal route, the operative mortality being 24 per cent. Those surviving patients whose after-histories could be traced numbered 53; 9 had recurrences within twelve months, 8 during the second to the fifth years, and one in the tenth year. Twenty-two patients were free from recurrence after five years, 31 after two years. The proportion of recurrences was 34 per cent., and of five-year cure 41.5 per cent. So far as statistics are concerned, the operative mortality and incidence of recurrence were both less after vaginal than after abdominal hysterectomy; but in this series those cases in which some degree of fixation of the uterus was perceptible clinically were chosen for abdominal operation. The oldest patient was aged 69; the two youngest were 35 years old. Judged by the operative and end results, carcinoma of the

body of the uterus does not appear to show any greater degree of malignancy in the younger than in the older patients. In two cases the abdominal operation consisted in subtotal hysterectomy; one patient was lost sight of, but the other was alive and well eight years later. It is not stated that the diagnosis was verified microscopically in all cases.

522. Foetal Death and Protein Shock.

E. FISCHER (*Zentralbl. f. Gynäk.*, October 4th, 1924, p. 2203) has been accustomed to immunize pregnant patients suffering from any form of streptococcal infection. In two cases of pyelitis of pregnancy this was followed by anaphylaxis. In the first symptoms appeared in six days in the form of an exanthematous rash, most marked at the site of injection, and accompanied by swollen glands. The rash became worse two days later, and the tonsils and larynx were affected. Abdominal and joint pains then appeared, and were followed by labour pains. Labour ran a very rapid course and was completed in four hours, although the patient was a primipara. The child was born dead; petechial haemorrhages were found and an abnormally distended bladder. In the second case the anaphylactic phenomena came on six days after the injection. They were similar to those in the first case but not so severe. They were followed by rapid onset of labour, which was completed in one and a half hours. The patient was a multipara. The child was born alive but feeble, and died in sixteen hours. Marked internal haemorrhages were found, especially in the brain, kidneys, and suprarenals. Fischer considers it probable that protein shock was the cause of death in these two cases and that it also accelerated labour unduly. He has since then never given serum injections to pregnant women without taking precautions against anaphylaxis, or unless labour has already started; during the last ten months he has had no further cases of protein shock to report.

Pathology.

523. Increasing Acquired Immunity in the Guinea-pig.

C. ZOELLER (*C. R. Soc. de Biologie*, October 24th, 1924, p. 858) found that if guinea-pigs were given two injections of diphtheria anatoxin they became, after a certain time, refractory to experimental infection with the diphtheria bacillus. Inoculating the bacillus on the conjunctiva appeared to be devoid of effect, so far as symptoms were concerned, but on bacteriological investigation it was found that the bacillus had established itself in this position, thus converting the animal into a healthy carrier. Wondering whether this establishment of the diphtheria bacillus on the healthy conjunctiva had any effect on the immunity of the animal, Zoeller carried out some experiments in which guinea-pigs vaccinated with anatoxin and subsequently treated by conjunctival inoculation of living bacilli were compared with guinea-pigs which had received the anatoxin only. Into each animal three different dilutions of diphtheria toxin were injected intradermally; the dilutions employed were 1 in 5, 1 in 10, and 1 in 20. Whereas the first series of animals reacted to two of the dilutions and recovered, the second series reacted to all three dilutions and subsequently succumbed in a state of cachexia. It appears, therefore, that infection with the diphtheria bacillus, subsequent to the establishment of immunity, has a stimulating effect on the immunity of the animal, raising it to a higher level than that attained by the injection of anatoxin alone. If this be true for man it is justifiable to suppose that the exposure of vaccinated individuals to infection in an epidemic medium would have the beneficial effect of increasing their immunity.

524. Calcium Content of the Blood in Skin Diseases.

H. J. SCHWARTZ and O. L. LEVIN (*Arch. Derm. and Syph.*, November, 1914, p. 544) found in over 300 cases of various diseases of the skin that no positive relationship between the blood calcium content and the disease appeared to exist, and there seemed to be no special significance in a decrease in the blood calcium unless marked. In only one case of psoriasis was a definite decrease noted, but in acne, eczema, furunculosis, and folliculitis barbae several cases showed a noticeable decrease, and a decided improvement resulted in some from the internal administration of parathyroid and calcium lactate, such improvement being associated with an increase in the blood calcium. Two cases of purpura and two of erythema multiforme gave low figures, but the number examined was too small to warrant conclusions; in urticaria there appears to be no deficiency.

525. The Use of Arsenobenzene in Blood Transfusion.

CH. FLANDIN and A. TZANCK (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 13th, 1924, p. 1487), while recognizing the excellent results obtained with sodium citrate in blood transfusion, believe that the arsenobenzenes have the following advantages: (1) Anticoagulant power: 0.03 to 0.06 gram of sulfarsenol is sufficient to render 100 c.cm. of human blood incoagulable, as contrasted with 0.3 to 0.5 gram of sodium citrate. (2) Toxicity: 0.01 gram of sodium citrate is a lethal dose, on intracardiac injection, for a guinea-pig of 500 grams, while a similar guinea-pig will survive a dose of 0.03 and even 0.05 gram of sulfarsenol. In man the toxicity of the amount of sulfarsenol used in transfusion is *nil*, save in exceptional cases. (3) Blood changes. The action of the arsenobenzenes on the blood seems analogous to that of sodium citrate. Anticoagulant action is not due to the destruction of globulins. Complement disappears immediately on the addition of either of these, so that the original Wassermann test is impossible with blood so treated. Poikilocytes do not appear so quickly after the addition of sulfarsenol as after sodium citrate. (4) Dilution of blood. By using sulfarsenol it is only necessary to add a trace of foreign liquid to the blood, while sodium citrate involves the addition of a much larger bulk of fluid.

526. Production of Tuberculous Cavities in the Rabbit.

A. PHILIBERT and F. CORDEY (*C. R. Soc. de Biologie*, November 21st, 1924, p. 1072), in their experiments on reinfection in tuberculosis, instead of using the guinea-pig as most workers have done, chose the rabbit. Large doses of tubercle bacilli —type not stated—were injected intratracheally (1) into animals which had been previously infected by subcutaneous injection, and (2) into animals which had been previously infected by intratracheal injection. Whereas in the first class the pulmonary lesions following reinfection were diffuse, hyperplastic, and showed no tendency to caseation, in the second class nodular caseous lesions were formed which broke down with the production of large cavities. The first injection consisted of 50 mg. of bacilli; the second, given one or two months later, of either 1 mg., 50 mg., or 100 mg. The rabbits which received 1 mg. showed at autopsy large caseous foci, which did not soften and break down; those which received 50 mg. showed in two cases out of five large caseous foci, some of which were softened and others of which were on the point of breaking down and discharging; those which received 100 mg. showed enormous cavities. In the case of one animal which received a preliminary dose of 50 mg., followed a month and a half later by a dose of 100 mg., the autopsy, performed five days after the reinfecting dose, revealed a large cavity, the size of a nut, in the left lung, and a large cavity, the size of a small nut, at the summit of the right lung. These experiments show, according to the authors, that infection and reinfection by the tracheal route do not give rise to an allergic reaction with congestion and focal necrosis, but to massive caseation. The first infection did not protect the animal against reinfection.

527. Conversion of Saprophytic Acid-fast Bacilli into Tubercle Bacilli.

A. CALMETTE (*Rev. Belge de la Tuberculose*, October, 1924, p. 293) gives a critical summary of the literature relating to the possible conversion of saprophytic acid-fast bacilli into pathogenic tubercle bacilli and the reverse transformation, adding a few experiments of his own. Though he has been able to induce certain alterations in the virulence of the tubercle bacillus, he has never succeeded in bringing about a change of such a degree as to justify him in considering it of significance in so far as this question is concerned. By cultivating tubercle bacilli on glycerin-bile-potato for a period of thirteen years he has produced a bacillus which, though still acid-fast, has lost all its virulence, and is unable to give rise to tubercles in any species of animal. Yet its power of producing tuberculin remains as strong as that of the normal tubercle bacillus, and on injection into animals it gives rise to antibodies which can be titrated by means of the complement fixation test, using an extract of the tubercle bacillus as the antigen. Similarly, in the literature, he is unable to find any evidence of value pointing to a conversion of the tubercle bacillus into a saprophytic form. With regard to the reverse transformation—the conversion of the saprophytic acid-fast bacilli into pathogenic tubercle bacilli—the evidence is equally defective, according to him. Experiments he has made with the Timothy grass bacillus have shown a complete lack of adaptation of the organism to a parasitic existence. He concludes, therefore, that mankind has nothing to fear from the saprophytic acid-fast bacilli.